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St Helena

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Important Bird Areas

St Helena

Tony Prater

Richard Allen

Wirebird *Charadrius sanctaehelenae*

Abstract St Helena is a remote, volcanic island in the tropical South Atlantic. Before human settlers arrived, a range of habitats developed and the island supported six endemic landbirds and three endemic seabirds. Human settlement had a devastating impact on St Helena and the Wirebird *Charadrius sanctaehelenae* is the only endemic bird species that remains. St Helena has two Important Bird Areas, North-east St Helena and South-west St Helena, both incorporating areas for the Wirebird and for seabird communities. The island is a UK Overseas Territory, and the UK Government has funded a major project to build the island's first airport. Construction is currently under way, and is intended to provide the platform for a substantial increase in both the resident and the tourist population, with the long-term aim of reducing the importance of UK subsidies in the island's economy. Efforts to ensure that important habitats and species are not further degraded will be of the utmost importance in the coming years.

The UK Overseas Territory of St Helena (15°58'S 5°43'W) is nothing if not remote: it lies some 1,800 km west of Angola and 3,250 km east of Brazil, while the nearest land mass is Ascension Island, 1,300 km to the northwest. The island has a surface area of 121.7 km² and was created by a series of volcanic eruptions between 8 and 14+ million years bp from hotspots on the abyssal plain, close to the Mid-Atlantic Ridge. The island's age and its altitude, which rises to 820 m, have resulted in a wide range of

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conditions suitable for different habitats to develop. Within about 2 km of the island the seas are shallow – around 100 m deep – but beyond 2 km the ocean floor drops rapidly, to around 3,600 m.

Although St Helena is well within the tropics, the climate is greatly influenced by the prevailing winds and currents. The island lies within the southeast trade winds and is at the northern edge of the cold Benguela Current, which sweeps up from the southern oceans. Consequently, the island is warm but not conventionally tropical and the prevailing southeasterlies bring plenty of humid air with regular but relatively light rainfall, ranging from a mean annual 1,050 mm on the central ridge to 175 mm in the driest areas. The main rainfall periods are in February–March and again in June–July. The variation in temperature across the island depends largely on altitude, with mean minimum temperatures at sea level varying from 20° to 24°C and the mean maximum ranging from 21.8°C to 26.5°C at sea level and 14.5° to 18.5°C at 600 m.

The productivity of the seas is relatively low because the cooler, nutrient-rich waters are trapped below warmer water, although there is some upwelling of nutrients nearby from the Benguela Current. The sea temperature, which generally varies between 22°C and 26°C through the year, is at the lower limit for tropical seas.

When first discovered, the island had an extensive natural fauna and flora with a well-developed cover of low trees and shrubs. Much of the invertebrate fauna appears to have originated in Africa but the extant relatives of many of the plants are spread widely around the southern hemisphere and it is thought that some could have arrived through colonisation events from the Pacific islands. The impact of human settlement was dramatic and resulted in the vast majority of the endemic wildlife being destroyed or driven to the point of extinction. Of the terrestrial birds, six were endemic: one, a large, ground-living pigeon, became extinct before humans arrived, but a further four – two flightless rails, a predominantly ground-living hoopoe and a cuckoo – were driven to extinction. Just one, the Wirebird *Charadrius sanctaehelenae*, survives to this day. A similar pattern of loss can be traced among the seabirds (see below). Most of the flora that survived was confined to the higher and wetter areas of the central ridge or on near-vertical rock faces where rabbits and goats could not reach it. The specialist invertebrate fauna is associated with native vegetation or

Tony Marr

370. Approaching St Helena from the south, April 2005.

the semi-desert habitats in the south of the island and few species have extended their range to introduced plants.

St Helena was first discovered in 1502 by Portuguese sailors returning from India, for whom it provided a valuable staging post. Pigs and goats were quickly introduced, followed by a wide range of edible fruits and vegetables. For the next 120 years there were just small numbers of inhabitants, before the Dutch laid claim to the island in 1633. The East India Company took over and developed the island from 1649 and from then on, with just a brief intervention by the Dutch, it remained in the hands of the East India Company until 1834, when it was transferred to the British Government. Throughout this period it was used to resupply vessels and act as a naval rendezvous. Since then, apart from a number of attempts to produce an export income, it has essentially been supported by UK subsidies – and this is a key reason for the development (now under way) of the island's first airport.

The St Helena Government (SHG) provides the administrative structure that protects and manages the island's terrestrial and marine environment. Recent changes have seen the establishment of an Environmental Management Directorate (EMD), which is currently developing a management plan for the island's environment including the new Nature Conservation Areas identified in a revised Development Control Plan through the Planning Department. Agriculture and its support is covered by the Agriculture and Natural Resources Directorate (ANRD). Elected representatives form two overseeing committees (ExCo and LegCo) and there is an appointed Governor from the UK who has additional overriding powers. In addition, the St Helena National Trust (SHNT), a charity but supported by legislation, has a wide brief relating to all aspects of protection and management of the natural and built heritage and landscape.

The key references to St Helena and its birds are Rowlands *et al.* (1998), Ashmole & Ashmole (2000), Rowlands (2001) and McCulloch (2004). Much of the information presented here is a digest from these publications, updated with more recent research and observations.

Fig. 1. St Helena, showing the sites and areas referred to in this paper.

Edward Thorpe

371. Turk's Cap – a view of the arid, volcanic southern coastline of St Helena, February 2010.

Island habitats

Much of the island has been severely modified by human activities and the few natural habitats that remain show clear signs of degradation. It is critical that efforts to ensure that important habitats and species are not degraded further should be among the highest of the island's and the UK's priorities.

The island is almost completely fringed by steep, high cliffs, often with near-vertical faces of 300 m or so. Inland of these cliffs is a band of deeply incised semi-desert with which much of the remnant endemic flora is still associated. Rapidly spreading Wild Mango *Schinus terebinthifolius*, Hottentot-fig *Carpobrotus edulis*, African Fountain Grass *Pennisetum setaceum* and other introduced species are a threat to its integrity.

Along one semi-circular ridge of a volcanic shield in the south of the island, the land rises to 820 m. This ridge, the Peaks National Park, catches the prevailing wind and is frequently in cloud with mostly light rain. As a consequence, it is relatively undeveloped and many of the endemic ferns, grasses and some of the low trees have persisted, despite the sweeping invasion of New Zealand Flax *Phormium tenax* (introduced as a cash crop, mainly from the 1870s). Many other invasive plants are putting pressure on the native species here and major programmes are under way to try to reduce the area they cover and to restore endemic species.

To the south and east of the Peaks National Park are a series of mostly cattle-grazed dry grass pastures, many of which have been undergrazed for many years and as a result have been increasingly invaded by non-native woody shrubs including Lantana *Lantana camara*, Wild Mango, Wild Coffee *Chrysanthemoides monilifera*, Poison Peach *Diospyros dichrophylla*, Gorse *Ulex europaeus* and trees, especially Bermudan Cedar *Juniperus bermudiana*. These pastures are important breeding areas for the Wirebird.

The rest of the interior is known as the Green Heartland and provides a striking contrast with the dry semi-desert; it is mostly grass pasture (frequently dominated by Gorse and increasingly Whiteweed *Austroeupatorium inulaefolium*) and non-native conifers, nestling among the steep valleys cut through the soft volcanic soils. Only in the exceptional habitats of waterfalls and drier pastures are there any significant remnants of the endemic flora and fauna.

Two Important Bird Areas were identified on St Helena, both incorporating areas for

Edward Thorpe

372. Longwood fields – an urban area with golf course, market-garden fields, dry grassland and scrub, December 2010.

the Wirebird and for seabird communities, in particular the Red-billed Tropicbird *Phaethon aethereus*. These are North-east St Helena and South-west St Helena (Rowlands 2006b). However, following a long run of detailed surveys, SHG has decided to introduce a new conservation and landscape designation, the National Conservation Area (NCA). The NCAs will cover the most important Wirebird and seabird areas and management plans will be developed. They will not cover all areas where the Wirebird is found but they should provide a mechanism to ensure better management and therefore long-term survival in key areas. The NCAs will be located within the existing IBAs.

Edward Thorpe

373. Red-billed Tropicbird *Phaethon aethereus*, with Jamestown castle as a backdrop, November 2010.

The only endemic bird surviving: the Wirebird

The Wirebird, or St Helena Plover, is a small *Charadrius* plover, closely related to and no doubt evolved from the widespread Kittlitz's Plover *C. pecuarius* of Africa. In comparison with the latter it has much longer legs (hence the name), a longer bill, rather more rounded wings and is slightly larger and paler, with just a light salmon wash to its white underparts.

The Wirebird has probably never been abundant, previous estimates suggesting that the population was formerly between 100 and 1,000 birds. However, it was not until 1988/89 that the first detailed census was made (McCulloch 1991, 1992), which found 425 adults. Sporadic counts were made thereafter (McCulloch & Norris 2001, 2002; McCulloch 2006) until 2007, when regular counts were started through the SHNT, organised by their Wirebird Conservation Officer. The counts of adults are shown in fig. 2. A steep decline was noted between 2001 and 2006 but since 2007 numbers have fluctuated around a mean of 361 adults. As a result of the sharp decrease between 2001 and 2006, the species was classified as Critically Endangered by BirdLife International (Thompson 2007); it remains precariously placed.

Most of the Wirebirds breed on the dry pasture areas that form a large semi-circle in the south of the island, while most of the rest are found in semi-desert that separates the pasture from the clifftops. One important concentration breeds in wet pasture at the edge of the Green Heartland, at Broad Bottom. That site apart, the main concentrations are on the dry pasture at Deadwood Plain (by far the most important site for the species), at Bottom Woods, Woody Ridge and on the southwest point at Man and Horse and Southern Pastures. The main semi-desert concentrations are around the Prosperous Bay Plain complex (where the airport is to be built) and Horse Point. In the past, birds were much more widespread but many of the breeding sites in the northwest of the island, around Half Tree Hollow, are now mostly under urban sprawl.

Studies by McCulloch (1991, 1992), McCulloch & Norris (2001, 2002) and recently by Burns (2011) and the SHNT have looked at various aspects of the ecology and breeding biology of the Wirebird. If the two-egg clutch is to be left, the sitting bird covers the eggs with dried vegetation; but despite this, the loss of clutches is high and survival to fledging is very low. Studies using nest cameras have identified a range of introduced predators at the nests, principally cats (feral and domestic) and rats (mostly Brown Rats *Rattus norvegicus* but possibly also Black Rats *R. rattus*). The relative density of cats in an area is a good predictor of Wirebird nest survival for that area, and across the island only about 0.1 chicks are expected to fledge from each nest. Fortunately, adult Wirebird

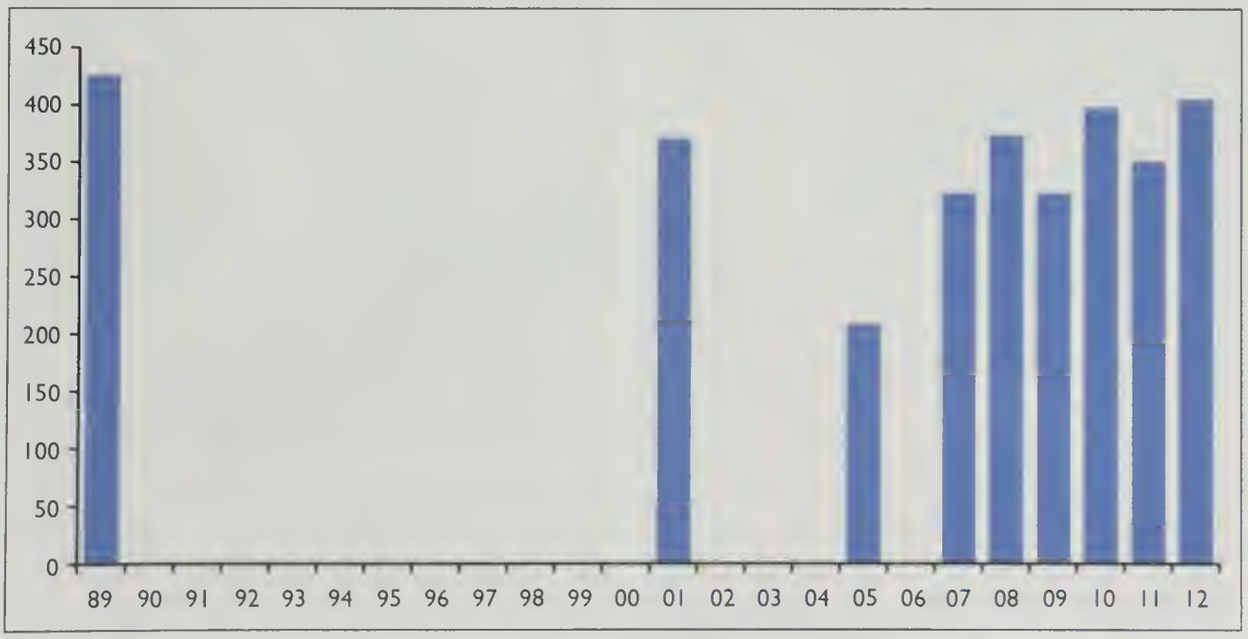

Fig. 2. Whole-island counts (no. of adults) of the St Helena Wirebird *Charadrius sanctaehelenae*, 1989–2012.

Edward Thorpe

374. A St Helena Wirebird *Charadrius sanctaehelenae*, in semi-desert habitat with encroaching Hottentot-fig *Carpobrotus edulis*, October 2009.

survival is high. Nonetheless, mammalian predators appear to play an important role in Wirebird population dynamics (Burns 2011). Two interlinked studies, supported by Defra, the Overseas Territories Environmental Programme and the RSPB, are currently under way to look at the implications and effectiveness of predator control. The studies are focusing on the interaction between the two main predators (i.e. cats and rats) and Wirebird productivity, to develop efficient and cost-effective predator management.

Wirebird territories are characterised by flat areas with short vegetation and bare ground and there is a correlation between fluctuations in Wirebird density over time and habitat change; habitat change is likely to have been a major contributor to the species' decline at the start of the twenty-first century.

Tony Prater

375. Female Wirebird breeding on Bottom Woods, January 2009.

Edward Thorpe

376. Wirebird chick, a few days old, October 2009.

Seabirds

Excavation and analysis of bone deposits in the south of the island have shown that there was formerly a substantial number of seabirds breeding on the island. Bourne (1990) put the population at several million and detailed studies by Olson (1975) and Lewis (2008) identified three presumed endemic species that no longer exist. These were a *Pterodroma* (*rupinarum*), a presumed *Bulweria* (*bifax*) and a shearwater *Puffinus* (*pacificoides*); in addition, remains of four extant seabirds were identified: Audubon's Shearwater *Puffinus lherminieri*, Great *Fregata minor* and Lesser Frigatebird *F. ariel*, and White-faced Storm-petrel *Pelagodroma marina*. Many of these species would have bred on the open, semi-desert habitats in the southern half of the island prior to its discovery by humans, but with the introduction of predators they were soon extirpated, leaving small offshore islands and stacks plus steep cliffs as the only predator-free breeding areas. Only the St Helena Shearwater is known to have become extinct before the arrival of humans.

Of the seabirds that bred in the past, there are occasional sightings offshore of a small black-and-white shearwater that has not been identified conclusively, while a bird captured inland on 22nd February 1976 (and probably heard in the same area in January 1978) appears to have been an Audubon's Shearwater. There is one confirmed record of a White-faced Storm-petrel: during a ringing session on Egg Island on 23rd July 2009 a recently fledged bird was captured. This was considered likely to have fledged on Egg Island (Bolton *et al.* 2010). There have been further unconfirmed sightings near George Island and offshore since then.

Three other records show the potential of St Helena to hold surprises. The finding of a recently killed adult and juvenile Bulwer's

Seabirds recorded on St Helena since 1980 — BOX 1

Breeding birds

Bulwer's Petrel *Bulweria bulwerii* – has bred but is very rare
White-faced Storm-petrel *Pelagodroma marina* – newly fledged juvenile in 2009 is only record but probables have been seen by fishermen offshore
Madeiran Storm-petrel *Oceanodroma castro* – population not known but probably 100–200 pairs
Red-billed Tropicbird *Phaethon aethereus* – probably <100 pairs
Masked Booby *Sula dactylatra* – 200+ pairs
Brown Booby *Sula leucogaster* – occasional breeder
Sooty Tern *Onychoprion fuscatus* – much reduced, from c. 200 in the 1980s to <10 pairs
Brown Noddy *Anous stolidus* – probably 200–400 pairs on islands
Black Noddy *Anous minutus* – estimates of 3,000+ pairs
White Tern *Gygis alba* – probably 300–400 pairs

Migrants and vagrants

Wandering Albatross *Diomedea exulans* – one, off Rupert's Bay, February 1988
Southern Giant Petrel *Macronectes giganteus* – one, 12th July 2005, in Rupert's Bay
Murphy's Petrel *Pterodroma ultima* – at least twice in March 1988, possibly in other years
Sooty Shearwater *Puffinus griseus* – storm-driven bird at Longwood, 18th October 1983
Audubon's/Macaronesian Shearwater *Puffinus lherminieri/baroli* – occasional sightings of probables
White-tailed Tropicbird *Phaethon lepturus* – one, 13th June 2005, at Speery Cap
Red-footed Booby *Sula sula* – occasional, the latest on 11th March 2011 at Castle Rock
Ascension Frigatebird *Fregata aquila* – singles on 21st December 2002 and 11th March 2011 on George Island
Pomarine Skua *Stercorarius pomarinus* – 10–30 roost in James Bay in winter
Arctic Skua *Stercorarius parasiticus* – up to 100+ roost in James Bay in winter
Kelp Gull *Larus dominicanus* – an immature in James Bay on 16th October 2007

Edward Thorpe

377. Shore Island – one of the offshore islets that form important, predator-free nesting sites for seabirds, photographed here from Gill Point, September 2007.

Petrel *Bulweria bulwerii* in a cat lair at Gill Point in early February 1995 (Ashmole *et al.* 1999) and the capture of an adult with a brood patch on Egg Island on 28th July 2011 (Oppel *et al.* 2012) give rise to hopes that a small number of Bulwer's Petrels are breeding on the cliffs or small, predator-free islands. Even more intriguing was the capture of an all-dark *Pterodroma* petrel, considered to have been a Murphy's Petrel *P. ultima*, in March 1988; it, or others, had been heard several times in the late 1980s (Rowlands & Trueman 1999).

Today, the small offshore islands and rock stacks and the cliffs of the main island hold the breeding colonies of seabirds that feral cats cannot reach. Red-billed Tropicbird and Madeiran Storm-petrel *Oceanodroma castro* are the most significant species. St Helena holds the most southerly breeding colonies in the Atlantic Ocean for these two species (and the same is true of the Black Noddy *Anous minutus*). The Red-billed Tropicbirds breed predominantly on the tallest and steepest cliffs on the west and south coasts. They are among the first birds to greet visitors arriving by sea into James Bay.

The Masked Booby *Sula dactylatra* has bucked the general trend of declining seabird

Edward Thorpe

378. Masked Boobies *Sula dactylatra* are newly colonising the mainland of St Helena; October 2009.

populations on St Helena. The first breeding records were in the mid 1980s (Rowlands *et al.* 1998) and some 200 were seen around George and Shore Islands in the 1990s but few of these were breeding birds. From 2009, however, a number of pairs have bred on the tops of ridges on the mainland near Lot's Wife's Ponds; by 2011 over 150 adults were present with 40 pairs breeding successfully (Bolton *et al.* 2011; EMD data).

The Madeiran Storm-petrel breeds solely on offshore islands, particularly Egg Island, though kills have been found in cat's lairs on the main island and it is likely that birds try to breed on the cliffs at times. For many years it was assumed that there was a single breeding season, from late September to late December, but recent studies have shown that a large proportion of birds breed between late March and early July and that this 'double breeding season' is constant between years (Bennett *et al.* 2009). This raises the possibility that, like some other Madeiran Storm-petrel colonies farther north, the double-peak may signal sufficient genetic diversity for specific separation (Bolton *et al.* 2008; Friesen *et al.* 2007).

The most obvious seabird on St Helena is the White Tern *Gygis alba*, which breeds widely on the cliffs and also nests on branches of trees throughout the island. No detailed study has been made of the inland population but it is not unusual to see 50–100 birds over the woodland above Sandy Bay and a similar number below Plantation House and a further 50 or so around Jamestown, where they even breed in trees over the Main Street and in Castle Gardens; the population is probably at least 300–400 pairs.

BOX 2

Breeding landbirds of St Helena

Chukar Partridge *Alectoris chukar*
Common Pheasant *Phasianus colchicus*
Moorhen *Gallinula chloropus*
Wirebird *Charadrius sanctahelenae*
Feral Pigeon *Columba livia*
Peaceful Dove *Geopelia striata*
Indian Myna *Acridotheres tristis*
Madagascar Fody *Foudia madagascariensis*
Java Sparrow *Lonchura oryzivora*
Common Waxbill *Estrilda astrild*
Yellow Canary *Serinus flaviventris*

Breeding landbirds

The Wirebird apart, the landbird fauna of St Helena is impoverished; it has one species considered to be indigenous and nine species that have been introduced. The Moorhen *Gallinula chloropus* has substantial powers of flight and is likely to have reached St Helena without assistance; a small population of perhaps no more than 20 pairs is associated mostly with the island's permanent watercourses and some small reservoirs. The proposed Ramsar site of Fisher's Valley, which runs below Longwood, and Sandy Bay stream are the most reliable sites for the species. Most of the non-native passerines are quite numerous and found over much of the island.

BOX 3

Vagrant landbirds recorded on St Helena, other than Cattle Egret, with confirmed records since Rowlands (2001)

Dwarf Bittern *Ixobrychus sturmii* – singles, 9th October 2011 and 6th January 2012, first for St Helena
Squacco Heron *Ardeola ralloides* – one, 9th–23rd (at least) August 2012
Grey Heron *Ardea cinerea* – one, 17th March 2003; one, 3rd May to 10th June 2009
Purple Heron *Ardea purpurea* – one, 25th October 2009, first for St Helena
White Stork *Ciconia ciconia* – singles, 2nd October 2007, 17th March to 5th April 2011
Striped Crake *Aenigmatolimnas marginalis* – adult female, January 2007, first record for St Helena
Allen's Gallinule *Porphyrio alleni* – singles, 26th April 2001, 22nd April 2004, 14th December 2006, 14th January 2007
American Purple Gallinule *Porphyrio martinica* – one, 1st May 2002
American Golden Plover *Pluvialis dominica* – one, 24th–31st January 2007
Swift sp. *Apus apus/barbatus* – two, 29th January 2012

Tony Prater

379. Southern Pastures – dry grassland with extensive invasive woody plants, which is becoming less suitable for the Wirebird, February 2011.

Vagrant landbirds

Since the island is so far away from continental land masses, it is not surprising that relatively few birds reach St Helena. The most regular by far is the Cattle Egret *Bubulcus ibis* and small flocks of this cosmopolitan species have been recorded. Vagrants from both Africa and South America have occurred (Rowlands *et al.* 1998; Rowlands 2001, 2006a; Springett 2007; Hillman & Clingham 2012; EMD database) and recent records are summarised in Box 3.

Other important flora and fauna

As with so many isolated islands there are no endemic mammals, land reptiles or amphibians. The seas around the island do support a small number of Whale Sharks *Rhincodon*

Edward Thorpe

380. Prosperous – the site of the new St Helena airport on the semi-desert habitat just inland from the east coast, May 2009.

typus during January to May, along with a few hundred resident dolphins. Most of these are Pantropical Spotted Dolphins *Stenella attenuata*, but there are also a few Bottlenosed Dolphins *Tursiops truncatus*. Humpback Whales *Megaptera novaeangliae* calve off the island between June and December. There are regular sightings of Hawksbill *Eretmochelys imbricata* and Green Turtles *Chelonia mydas*; the latter has bred recently in Sandy Bay and it is hoped that it may return to this former breeding site.

Because of the island's long history since the last volcanic eruption, it has received several waves of colonisation by plants and insects (Ashmole & Ashmole 1998 estimated that there may have been 30 colonising events for spiders (Araneae) and 23 for beetles (Coleoptera)) with the result that, when it was discovered in 1502, it would have had a very unfamiliar flora and, less obviously, fauna. Nowadays, the most likely natural colonisations would be from the east, as a result of storm events and strong south-easterly winds from Africa, but it is likely that the original colonisers came from much farther afield. At the time of discovery, the flora would have been very special, with a huge radiation of Compositae that formed much of the scrub and tree cover in the drier zones. This included the Great Forest (primarily of St Helena Gumwoods *Commidendrum robustum*) south of Longwood, which is now being actively replanted. The high ridge of the island was dominated by St Helena Tree Ferns *Dicksonia arborescens* mixed with wet-tolerating tree Compositae such as He, She and Black Cabbage (*Pladaroxylon leucadendron*, *Lachanodes arborea* and *Melanodendrum integrifolium* respectively). Many of these may have had their ancestors in South America although it is possible that they could have been in the Mascarene Islands or even Australia. Another group of species to survive belongs to the cocoa family and these were some of the most spectacular flowering plants of the island: the St Helena Ebony *Trochetiopsis ebenus* and the St Helena Redwood *T. erythroxylon* have their nearest relatives in the Mascarene Islands and Madagascar. Both have showy, trumpet-shaped flowers and are now being propagated in order to reintroduce them to the wild. With several species down to their last few plants, much work has been undertaken over the last ten years to halt the loss of the remaining endemic flora through projects by the ANRD and the SHNT.

Although there is real hope that a

Edward Thorpe

381. The semi-desert at Prosperous; the bright green/orange mass is the invasive creeper *Carpobrotus edulis* (Hottentot-fig), May 2009.

renaissance of endemic flora is under way, the same cannot be said for the invertebrates. Only a few, such as the endemic hoverfly *Loveridgeana beattiei*, have really adapted to the non-endemic plants. The majority of the others are in semi-desert areas, where conditions are closer to those they would have experienced prior to the large-scale habitat losses. An outstanding, internationally important area is the Prosperous Bay Plain, where fine laval sediment supports a large range of endemic spiders and beetles. The other important invertebrate area is on the high ridge, which includes the Peaks National Park, where specialist invertebrates that live in association with the native flora have managed to survive. The two totemic endemic invertebrates are almost certainly extinct – anyone interested in invertebrates would love to find either the Giant Earwig *Labidura herculeana* (up to 84 mm long) or the Giant Ground Beetle *Aplothorax burchelli* (up to 38 mm long); both were already very rare in the twentieth century and the last known of both were collected in the mid 1960s. While collection will not have helped, it is likely that the loss of the cover of the Great Wood followed by the rapid expansion of the most likely predators (House Mouse *Mus musculus* and the centipede *Scolopendra morsitans*) meant they could not survive for long.

The threats to birds

As with so many areas around the world, the threats faced by the wildlife of St Helena are threefold – introduced predators, economic development and habitat degradation. It does not matter whether one is talking about birds, plants or invertebrates, the immediacy of the problem is clear.

Introduced predators

For birds, the introduced predators, primarily cats and rats, pose the greatest immediate threat. The demographics of the Wirebird population show that unless the species' low productivity can be overcome, there is likely to be a slow but steady decrease in the population. The substantial feral cat population has to be reduced or eliminated in order for the population to prosper; although this sounds feasible, the island is large, complex and has a relatively large human population with improving access. There remain some issues about releases of unwanted cats into the wild. Fortunately, the Society for the Prevention of Cruelty to Animals, the SHNT and the ANRD have combined to find ways of overcoming both the supply of cats and the removal of feral cats. Rats remain a significant problem in the countryside. Most of the targeted control is in urban areas and, in recent years, efforts in the wider countryside

Tony Prater

382. Deadwood Plain from the Flagstaff track, showing the clearance of the grass paddocks in the middle distance and beyond under the mitigation project, January 2011.

Tony Prater

383. Millennium Forest, a newly planted area of endemic Gumwoods *Commidendrum robustum* on the site of the ancient Great Forest; a project of the St Helena National Trust, April 2006.

have been scaled back, probably leading to an increase in numbers. Exactly the same problem is seen with the seabird populations on the main island, where feral cat predation suppresses the population levels of most species. It is to be hoped that the lessons learnt from the control of cats in comparable circumstances on Ascension Island can be put to good use.

Economic development

Economic development and wildlife conservation are not necessarily mutually exclusive but, as in so many places, wildlife comes a poor second place to development on St Helena. The UK Government's decision to fund a project costing over £200 million to build an airport on St Helena is seen as the only possible way forward if the island is not to remain dependent on UK subsidies, and the airport is scheduled to be completed and open in 2015. It is sited on an important Wirebird area and impinges on an invertebrate hotspot. It is possible that some of the airport's negative impacts can be mitigated, and a major project, funded by the Department for International Development (DFID) and jointly managed by ANRD, SHNT and RSPB, to improve pastures so that they can hold more Wirebirds has just been completed. However, the airport is merely the foundation of wider plans – which are for the current size of the resident population of about 4,000 to more than double, and for tourists to increase from around 800 to 30,000 per annum. This will result in huge pressures on important wildlife areas, since this degree of expansion will mean a great increase in the supporting infrastructure. Already there are permitted developments for a major expansion of wind turbines and a huge hotel and golf course development on important Wirebird areas (some of which were in the mitigation area for the airport). However, the decision to proceed means that the conservation bodies have to work with SHG and developers to minimise adverse effects and secure the best possible outcome.

Habitat degradation

Over the last 20 years there has been a rapid spread of invasive plants on Wirebird pastures and in the semi-desert, where the

species also breeds. Many areas are becoming so overgrown that they are being abandoned for traditional grazing or because the cost of clearing them has become prohibitively expensive. Together with the proposed expansion in the human population (above), this habitat loss is the other element of the pincer movement that is likely to have a serious impact on Wirebirds in the medium term.

Endnote

Notwithstanding the threats outlined above, there are, however, some positive signs on St Helena, for example: the Wirebird mitigation project; the predator experiments and moves to reduce feral cats; major work to propagate and replant endemic plants; further research work on Wirebirds, seabirds and invertebrates; a new flora, due to be published in late 2012; and, potentially, the strengthened EMD of SHG. Whether the political will exists to prevent further loss and restore some of the past losses is another matter, particularly when the prevailing political mood is to prioritise economic development. If you want to enjoy this remote, peaceful and unspoilt island with its friendly people and special wildlife, then go now.

Acknowledgments

I would like to thank my many friends and colleagues for help on St Helena and allowing me to understand the pressures and opportunities there. In particular, in relation to this account, thanks go to Rebecca Cairns-Wicks, Elizabeth Clingham, Eddie Duff, Chris Hillman and Isabel Peters on St Helena, together with Mark Bolton, Fiona Burns, Steffen Oppel and Beau Rowlands for comments on the text. I am also grateful to Tony Marr and Edward Thorpe for allowing the use of their photographs.

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How to get there and how to contribute records

BOX 4

Access by aircraft will not be available before 2015, so presently the only way to reach St Helena remains by sea. The RMS *St Helena* (www.rms-st-helena.com) is the only passenger vessel and it runs between Ascension Island and Cape Town, via St Helena. Typically, the seas between Ascension and St Helena are pretty empty but the two-and-a-half-day voyage is relaxing. The longer six-day trip between Cape Town and St Helena provides much more seawatching, with flocks of Sabine's Gulls *Xema sabini* off Cape Town. During June–August, many southern seabirds may be encountered and some will be with the RMS until just before St Helena hoves into view – Spectacled Petrels *Procellaria conspicillata* are quite often present and are probably the rarest of the seabirds that may be seen. But there can be up to five species of albatross and a wide range of petrels and shearwaters. Some cruise ships also stop at the island, with the best of these being the nearly annual visit by the Atlantic Odyssey organised through Wildwings (www.wildwings.co.uk).

Records of unusual birds are kept by SHG's EMD but they can be sent via SHNT (www.nationaltrust.org.sh). When on the island, do remember that the fenced land is generally agricultural grazing land and is not open access. With the pressures on the island's habitats and wildlife, the most positive thing which visitors can do is to visit the SHNT in the Main Street (just up from the Castle Gardens on the left-hand side) in Jamestown and sponsor one of the projects or, even better, join the Trust (e-mail sth.nattrust@cwimail.sh). The Trust can also advise, as can SHG's tourism office, on where to see Wirebirds and who to approach for boat trips to see the seabirds/sealife.

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The Lapland Bunting influx in Britain & Ireland in 2010/11

Mike G. Pennington, Roger Riddington and Will T. S. Miles

Ben Green

Abstract An exceptional arrival of Lapland Buntings *Calcarius lapponicus* in Britain & Ireland occurred in autumn 2010. Large numbers remained to overwinter in some areas, and there was a substantial return migration in spring 2011. The distribution and timing of the influx is analysed. Numbers were greatest in north and west Scotland, and many central and western recording areas reported record numbers. Counts in the southeast were high but generally not record-breaking. Data from Europe are compared with the situation in Britain & Ireland. The origins and causes of the influx are explored and there is circumstantial evidence to suggest that the main drivers of the influx were an unusually good breeding season in Greenland combined with weather patterns in August and September 2010.

Introduction

The Lapland Bunting *Calcarius lapponicus* has a circumpolar distribution and is one of the most abundant migrant passerines of the Arctic region. It breeds across the far north of both the Eurasian and the North American land masses, nesting mainly in open, shrubby tundra, often in areas with dwarf scrub or which are damp and hummocky, but also in grassland in Scandinavia (*BWP*). Geographical

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variation is slight but five races were recognised by *BWP*, differentiated mainly by size and upperpart coloration, and all are migratory. Autumn migration usually begins in August, with the largest southward movements occurring in September and October (*BWP*; Wernham *et al.* 2002). In the Nearctic, birds normally winter on the Great Plains of southern Canada and northern/central USA, while in the Palearctic birds winter inland from Hungary to China and, in relatively small numbers, in coastal western Europe from southern Scandinavia and Poland to Britain & Ireland (*BWP*). In winter and on migration, a variety of open habitats with short or tussocky vegetation are favoured, including permanent rough grassland, fallow, ploughed and stubble fields, saltmarsh and even the strand line of sand and shingle beaches. Departure from the wintering grounds occurs from mid February onwards, with peak passage during March and April and arrival on the breeding grounds in mid May.

In autumn 2010, unprecedented numbers of Lapland Buntings were recorded in Britain & Ireland. Relatively large numbers overwintered and more than usual were seen during spring 2011. This paper presents information on the scale of the influx, with reference to the numbers elsewhere in Europe. A detailed breakdown of the distribution and numbers of birds is given, comparisons are made with previous years, and the likely origins of the immigrants are discussed. Data were obtained from several sources, but chiefly from a direct appeal to county or regional bird recorders in Britain & Ireland (data were received from recorders of every single recording area in Britain and from many areas in Ireland). Additional data were provided by BirdGuides (www.birdguides.com) and the Irish Birding website (www.irishbirding.com). Information from elsewhere in Europe was obtained from selected contacts or from online sources. Occasionally there were minor discrepancies between data obtained online and the information provided by county recorders. To get the most complete picture we have generally maintained an inclusive approach, but acknowledge that some records presented here may not (yet) have been accepted by the relevant records committees. Many of the statements in this paper about past records come from correspondence with county and local recorders – to maintain the flow of the text, we have usually made explicit reference only to published material.

Sean Nixon

384. Lapland Bunting *Calcarius lapponicus*, Thorpeness, Suffolk, August 2010. While the only large counts in late August 2010 were in the far north of Britain, there were a handful of records from southern areas too.

The influx in Britain & Ireland is described below under six logical headings, although there is some temporal overlap to accommodate the variety of events and geographical areas covered.

Initial arrivals: August and early September 2010

Initial arrivals were widespread, and the very first bird was in the far southwest, at Kynance Cove (Cornwall) on 23rd August. On 25th, two birds were at Balranald in the Outer Hebrides, and on 26th–27th singles were recorded from Orkney, Cleveland and Norfolk, two on Fair Isle and a flock of four at Bridges of Ross (Co. Clare). These were exceptionally early arrivals, but it became clear that something extraordinary was occurring on 28th August, when there were 60 on Fair Isle and 58 on North Ronaldsay (Orkney), as well as ten at Deelick Point (Co. Kerry), seven at Bridges of Ross, six at Scatness (Shetland), four at Cooanmore Point (Co. Sligo) and four on the Great Orme (Caernarfonshire). By the end of August there had been records from (in addition to the counties already noted): Antrim, Donegal, Galway and Wexford in Ireland; Cumbria, the Isle of Man, Anglesey, Ceredigion and Scilly in the west; and North-east Scotland, Yorkshire, Lincolnshire and Suffolk on the east coast of Britain.

At the end of August and the beginning of September the largest counts were on Fair Isle and in Orkney and the Outer Hebrides (numbers in Shetland were surprisingly low). In the Northern Isles, numbers peaked on 1st September with 184 on Fair Isle and 104 on North Ronaldsay. Notable flocks were also seen on Mainland Orkney, with a flock at Brough of Birsay peaking at 68 on 2nd September and 26 near Stromness on 3rd. The first large flocks arrived in the Outer Hebrides on 1st September, with 74 at Butt of Lewis and 40 at Balranald, on North Uist; large numbers were recorded at Balranald on 2nd–3rd, with reports of up to 200 birds. Numbers decreased in all these island groups after the first few days of September.

Flocks also appeared elsewhere in the west of Scotland at this time, with birds arriving on Tiree (Argyll) from 1st September and increasing to 48 on 5th. An impressive count of 71 was made along the track from Blairmore, near Kinlochbervie (Sutherland), in the northwest corner of mainland Scotland, on 2nd September, while there were 30 at Holborn Head (Caithness), just across from Orkney, on 5th.

Reasonable flocks were also reported from the west of Ireland, with 14 at Loop Head (Co. Clare) on 30th August, 15 at Erris Head (Co. Mayo) on 1st September and 15 on Tory Island (Co. Donegal) on 5th September.

Brydon Thomason

385. Lapland Bunting, Fetlar, Shetland, September 2010.

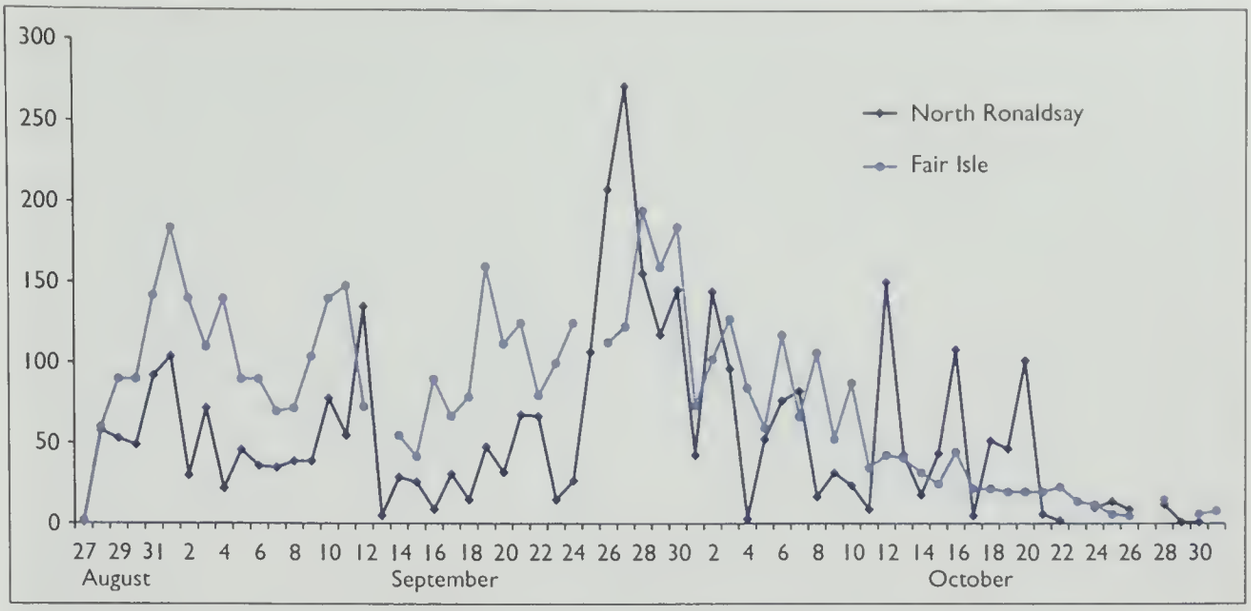


Fig. 1. Daily census counts of Lapland Buntings *Calcarius lapponicus* on Fair Isle and North Ronaldsay (Orkney), August–October 2010.

Around Irish Sea coasts there was a peak of 20 on the Isle of Man on 4th September, and small numbers were recorded in North Wales almost daily from late August, with a maximum of 12 at four sites on Anglesey on 7th September. There were records on southern Irish Sea coasts from 5th September, in Co. Dublin on the east coast of Ireland and in Pembrokeshire. Small numbers were seen in southwest England, with scattered records of mainly 1–2 birds and a peak of 11 at four sites on Scilly on 30th August.

On North Sea coasts there were almost daily records from North-east Scotland in early September, including a flock of 21 at Sands of Forvie on 9th. Birds were also widely scattered down the east coast of England to Kent; most were in the northeast, with a maximum of eight at Holy Island (Northumberland) on 5th September, and in Norfolk, where 15 were on Scolt Head Island on 4th.

Almost all the initial arrivals were at coastal sites, but there were early inland records too, including birds at Tindale Tarn on the northern edge of Geltsdale (Cumbria) on 31st August and at Fen Drayton (Cambridgeshire) on 4th September.

Second wave of immigrants: mid September 2010

Following a lull in the numbers reported, a new wave of migrants arrived in the Scottish islands from about 10th September. On Fair Isle, numbers increased from 72 on 8th to 148 on 11th then, after a few days of lower numbers, 160 on 19th. Elsewhere in Shetland, 12 at Scatness on 10th was the first double-figure count in the islands, but two sites held the largest flocks in mid month: up to 40 were seen daily on Foula (which was covered from 11th) and a flock of up to 40 was reported regularly at Lamba Ness on Unst. In Orkney, 78 on North Ronaldsay on 10th, the first count of more than 50 there for a week, increased to 135 on 12th, but numbers declined to lower levels for most of the subsequent fortnight. Some large flocks appeared in the rest of Orkney: on 19th September the flock at Birsay had increased to 70 and there were at least 116 between Stromness and Yesnaby, while 76 were at St Ola, near Kirkwall, on 20th.

New arrivals in the Outer Hebrides became obvious on 12th September, including 275 at Balranald, where flocks of up to 70 appeared to move through in a southeasterly direction. Away from North Uist there were notable counts of 115 at Barvas, Lewis, on 18th and 96 at three sites on South Uist on 20th. There was a scatter of records elsewhere in the west of Scotland but although a few were found at new sites, such as on Coll (Argyll), numbers were generally lower than earlier in the month.

In Ireland, the overall numbers were highest in mid September, in particular on the Belmullet Peninsula (Co. Mayo), where the total count peaked at 59 on 18th, with c. 58 on Inishbofin (Co. Mayo) at about the same

Ian Butler

386. Lapland Bunting, Malvern Hills, Worcestershire, September 2010. A scatter of records through midland England in autumn 2010 gave many recording areas their best year on record.

time. Elsewhere, up to 14 were reported on Loop Head and ten on Tory Island, sites that had held larger numbers earlier in the autumn, so there was relatively little evidence for new arrivals. Around Irish Sea coasts, numbers were also generally lower than they had been earlier in the influx, although the peak count for the Isle of Man was 25 at Point of Ayre on 12th, and a flock of 11 was at Kilcoole (Co. Wicklow) on 23rd September. In Wales, the largest flock was of seven on the Great Orme on 20th, while in southwest England the highest counts were on Scilly, with c. 20 on 20th–26th.

Lapland Buntings were widespread along the North Sea coasts of Scotland and England but the data suggest that birds were drifting gradually south or accumulating at sites, rather than being obvious new arrivals. At Barns Ness (Lothian), a flock built up to a peak of 45 on 19th September, while there were 22 at St Mary's Island on 22nd September and 24 at Beal (both Northumberland) on 24th, 52 at Donna Nook and 22 at Saltfleet (both Lincolnshire) on 18th September, and 20 at Cley (Norfolk) on 13th. At Spurn, the most productive site in Yorkshire (with a total of 479 bird-days and a visible migration total of 365 individuals south by 5th December), 18 flew south on 23rd September. A few reached the south coast, including small numbers on the Sussex coast (maximum five at Beachy Head on 26th). There was also a wide scatter of inland records, including nine over Stoke Newington Reservoir (Greater London), three over Annesley Pit Top (Nottinghamshire) on 16th, five on the summit of North Hill in the Malvern Hills (Worcestershire) on 20th September, and four over Oxenhope (West Yorkshire) on 23rd September.

Largest arrival: late September and early October 2010

With record numbers in many areas already, it was hardly expected that the largest influx was still to come, in late September and early October. North Ronaldsay posted a new record count, of 272 on 27th September. In the rest of Orkney, new arrivals were less apparent, and the largest flock reported was 50 at Yesnaby on 26th September. On Fair Isle, there was a new record count of 195 on 28th September. In Shetland, however, there were birds almost everywhere in the last week of September and the first week of October, and the figures available probably underestimate the real situation considerably. Some notable counts included 105 on Foula on 24th September, and 83 on Fetlar and 80 at

Eshaness on 25th. During 3rd–5th October there were at least 200 on Unst, in flocks of up to 40–50, but smaller numbers on Foula and in south Mainland (both areas with good coverage). Few birds reached the east side of the islands, however, and the peak count on Out Skerries (normally a favoured site) was just 18 on 2nd October.

In the Outer Hebrides there was also evidence of further immigration. Some 200 were seen around Loch Paible and Balemore (North Uist) on 24th September, up to 200 on the machair on South Uist and 70 at Butt of Lewis on 25th, and possibly as many as 350 on the South Uist machair on 3rd October. Some of these birds were clearly moving through quickly, as on Tiree 87 were seen arriving from the northwest on 2nd October.

Tim Melling

387. Lapland Bunting, Spurn, Yorkshire, September 2010.

In Ireland, 62 at Malin Head (Co. Donegal) on 4th October was a particularly notable count, but otherwise, this new wave of arrivals seems to have largely missed the west coast of Ireland; 20 at Loop Head and ten at Bloody Foreland (Co. Donegal) on 2nd October were the only other significant counts. Record numbers arrived in North Wales, principally on Anglesey: 54 were counted west of Wylfa, Cemaes, on 26th September and there were 104 between Wylfa and Carmel Head on 3rd October. The peak count on Bardsey (Caernarfonshire) was 37 on 8th October, another observatory with a new record. While these birds arrived at the same time as new arrivals in northern Scotland, it is also possible that they were birds from earlier in the autumn gradually filtering south. Numbers were still rather small in southwest England, although after a slight decline there was another peak of 19 on Scilly on 6th October, while the highest total on Lundy (Devon) was 33 on 7th October.

On North Sea coasts there was little evidence of new arrivals, although 38 were at Loch of Strathbeg (North-east Scotland) on 9th October, while a total of 36 flew south at Spurn on 7th October. Instead, birds seemed to be accumulating at a few favoured sites in coastal fields or saltmarshes. The largest aggregations were at Happisburgh (Norfolk), where numbers peaked at 100 on 2nd October, and between North Cotes and Donna Nook (Lincolnshire) where counts included 80 at North Cotes on 9th October.

Farther north there were 31 at Hunt Cliff (Cleveland), 30 at Buckton and 17 at Flamborough (Yorkshire) on 28th September, and 47 on Holy Island on 9th October. There were fewer inland records in England than earlier in the autumn, chiefly scattered reports of 1–2 birds.

End of the immigration: mid/late October and November 2010

There was no further evidence of immigration in the Northern Isles and Outer Hebrides after early October. On Fair Isle, numbers decreased steadily from 107 on 8th October, and two on 7th November were the last of the year there. On North Ronaldsay, the decline was more sporadic, with peaks of 151 on 12th October, and 100+ on 16th and 20th, but there were just odd records in November and December. Elsewhere in the Northern Isles, 37 at St Ola, Kirkwall, on 12th October was the last significant count in Orkney and there were no records after 9th November. In Shetland, 60 at Skaw, Unst, on 15th October and 40 at Virkie on 20th October were the last large counts, but there were regular records through November (which is unusual), the maximum being 19 at Exnaboe on 14th, while two at Baltasound, Unst, on 29th November were the last of the year. Similarly, in the Outer Hebrides, 100 at Borve, Benbecula, on 12th October and flocks of up to 40 on the South Uist machair on 18th–23rd October were the last large counts there but smaller numbers were reported throughout November, mainly on South Uist. In the Inner Hebrides, the passage through Tiree peaked at 160 on 13th October, but a few remained until early December.

In Ireland, birds became few and far between and, after a flock of 12 at Loop Head on 12th October, there were only another dozen or so reports in October, all of 1–2 birds, and even fewer in November; a flock of 12 at Tacumshin (Co. Wexford) on 23rd November was an isolated exception. In Wales, good numbers remained on the northwest tip of Anglesey, with 70 on 14th October and still 63 there on 31st; these had mainly moved on by mid November, although there were also 15 at Llanon (Ceredigion) on 27th. There was a wide scatter of birds in southwest England, including flocks of 27 at Tehidy Country Park on 27th October and up to 32 at Nanjizal

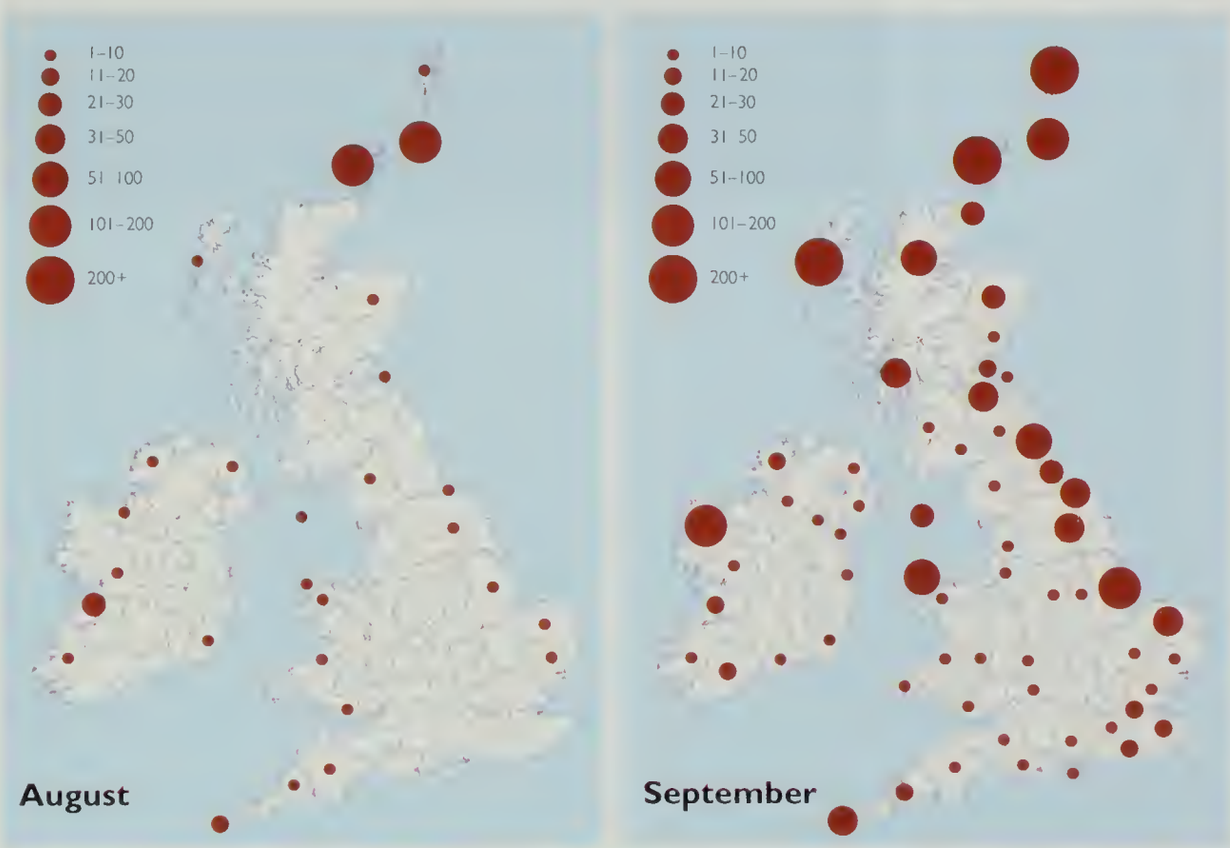
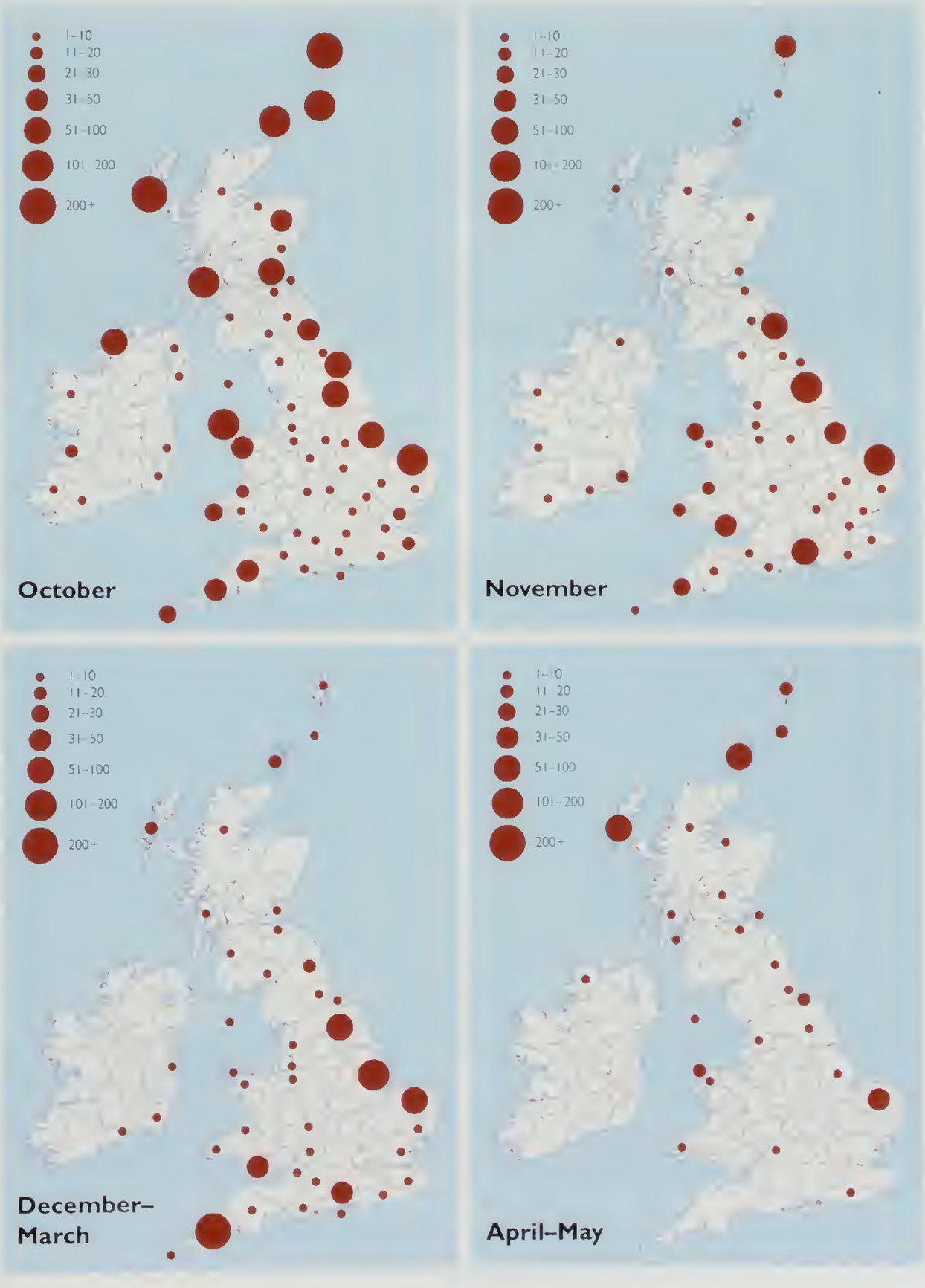


Fig. 2. Maximum day-counts of Lapland Buntings from all sites within each British and Irish recording area between August 2010 and May 2011.

(both Cornwall) on 5th November.

On North Sea coasts, numbers declined dramatically in Scotland (although 70 at Wormiston, Fife, on 16th October was a notable exception) but a few sites in England were accumulating birds, with selected peak counts as follows: 45 on Seaton Common (Cleveland) on 12th October, 80 at North Cotes on 18th October, 70 at Buckton on 30th October rising to 125 on 10th November, 60 at Holy Island on 1st November and 80 at Flamborough on 4th November, while in Norfolk there were flocks of 40 or more at five sites, including 70 at Paston on 24th October and 100 at Sheringham on 14th November.



Michael McKee

388. Lapland Bunting, Out Skerries, Shetland, October 2010.

Wintering birds: late November 2010 to March 2011

Only very small numbers wintered in Scotland, although birds lingered in some areas into December. On South Uist, there were regular records of up to ten, mainly at a regular bunting feeding site at Kilpheder, but also elsewhere, including five feeding on peanuts in a garden at Point, Lewis, on 7th January. A flock of up to nine was between Crail and Fife Ness (Fife) in January and there were a few reports of 1–3 in western Scotland, on Islay (Argyll) and in Ayrshire and Dumfries & Galloway, during December to February. In the Northern Isles, the only records between mid December and late March were 1–2 on Mainland Orkney in January. There were even fewer in Ireland: five reports of 1–2 in December and one at Loop Head (Co. Clare) on 17th–18th January.

In England and Wales the main concentrations of wintering birds were in the south and east, with a few sizeable flocks in coastal localities between Yorkshire and south Wales. Up to 103 were in a ploughed field at Flamborough Head (Yorkshire) in February, 83 were on saltmarsh at Frampton (Lincolnshire) on 26th December, there were flocks of 40 or more at Sheringham, Happisburgh and Breydon Water in Norfolk, with a peak count of 74 at Breydon South Wall on 25th January. A flock in stubble fields at Keyhaven (Hampshire) in late November peaked at 56 on 29th; 40 or more remained there in December and up to ten through January. There were three counts of 40 or more on the Gower Peninsula between 12th December and 1st January, and remarkable numbers in Cornwall in the New Year, with flocks of 40 or more at five sites, including 40 inland on Rosenannon Downs on 28th February, and a flock at Port Isaac that reached 150 on 6th March.

Spring migration: late March to May 2011

Very few remained in England in April with the exception of Norfolk – there were still 40 at Holme on 3rd April and regular sightings of 1–2 in the county until the end of the month. The last reports in England were at Sidestrand (Norfolk) on 5th May and Spurn on 7th May. A few reappeared in north Wales in spring, including ten at Carmel Head on 3rd April, while singles on Bardsey and at Cemlyn Bay on 1st May were the latest reports in Wales. Similarly, there were a few spring records from Ireland, in Donegal, Mayo and Wexford in late March and April, all of single birds.

The most obvious spring passage was in Scotland and while the volume was much lower than in the previous autumn many areas posted record spring counts. The first signs of emigration were on 26th March, with seven at Butt of Lewis (Outer Hebrides) and one at Copister, Yell (Shetland), the latter the first in the islands for almost four months. Four on Bute (Clyde Islands) on 10th April were notable as the first (ever) for the recording area. There were also six in suitable breeding habitat near the summit of Beinn a' Ghlò (Perth & Kinross) on 10th April (but no evidence that these birds lingered). Another count on 10th April, of 60 on North Ronaldsay (Orkney), was exceptional; 25 on the same island on 25th April is also notable. There was a scatter of records elsewhere in the Northern Isles, including 15 at Loch of Tankerness (Orkney) on 13th April, peaks of 15 at Quendale and 17 at Virkie (both Shetland) on 20th–21st April, and up to 14 on Fair Isle during 22nd–29th April. In the Outer Hebrides, a large flock at Balranald in mid April (which peaked at 54 on 19th) included several singing males; there were also 21 at Drimsdale, South Uist, on 19th.

In May there were records from nine different Scottish islands in six recording areas up to 11th, mainly of 1–2 birds apart from up to eight on Fair Isle on 1st–2nd. The only subsequent records involved singles on Foula on 17th, in Ireland (on Tory Island, Donegal) on 19th May, and on Fair Isle on 21st–29th May. A male in breeding plumage was found in the Cairngorms (North-east Scotland) on 30th July 2011, in an area of Scotland where the species has previously bred.

Records elsewhere in NW Europe in 2010/11

The first signs of migration in autumn 2010 came from Iceland, where Lapland Buntings are relatively scarce migrants, recorded almost annually but with fewer than 50 individuals in an average year (Pétursson & Kolbeinsson 2007). In the Westmann Islands, two were on Surtsey on 19th August and then a flock on Heimaey, from 26th August, built up to an unprecedented 130 on 5th September. There were also 100 at Garðskagi on the Suðurnes peninsula on 5th September, and reports of up to 15 at several other sites during the month. Most had moved on by

Roger Riddington

389. Male Lapland Bunting, Quendale, Shetland, April 2011. The numbers involved in the spring passage of 2011 were a fraction of those seen during the previous autumn, but there were still record counts at many northern sites.

October, but a late individual was near Keflavik on 6th November. The autumn passage in Iceland was exceptional and the numbers recorded in spring 2011 also exceeded all previous totals.

In the Faroe Islands, where there had been just nine records of 14 individuals up to the end of 2008, a flock of four flew over Viðareiði on 28th August (record not yet submitted to the Danish rarities committee); there was also a single there on 1st September, while about ten were recorded in the rest of the autumn (Silas Olofson *in litt.*).

In southern coastal Norway, away from the species' usual breeding areas, the first birds turned up at typical migration localities in August 2010, including three at Lista lighthouse, Vest-Agder, on 27th August and the earliest-ever autumn record for Utsira, on 28th. Birds primarily arrived on the west coast and peak numbers were from 10th September into October, including 95 at Røstlandet, Nordland, on 30th September and a record count for Utsira of 55 on 11th October. Utsira also had its latest-ever record, three on 19th November, while up to 40 wintered at sites in southern Norway (Geir Mobakken *in litt.*).

By contrast, in Sweden, it was an average year: at Ottenby, a total of 58 birds in standardised censuses in autumn 2010 compared with a ten-year average of 54 (Magnus Hellstrom *in litt.*), while 23 at Falsterbo compared with a 27-year average of 14 (Lennart Karlsson *in litt.*; www.falsterbofagelstation.se).

Large numbers were recorded along southern North Sea coasts from Denmark to the Netherlands. The first record in Denmark in 2010 was a single bird in Hanstholm, northern Jutland, on 31st August; the first large flock was 34 at Skagen on 23rd September, while 75 were on Rømø, in the Wadden Sea, on 30th September. The largest numbers in Denmark were on North Sea coasts, with an autumn peak of 120 at Ballum on 21st October, and the biggest flock ever recorded in Denmark, 160 near Bovbjerg, on 6th January 2011 (although the record was broken again in winter 2011/12). In spring 2011 the largest flock was of 65 at Vilslev Enge, also on the North Sea coast, on 26th March (Morten Hansen *in litt.*, www.dofbasen.dk).

On Helgoland, Germany, the first record was on 31st August and most records were in September, with a maximum of 23 on 23rd (Dierschke *et al.* 2011a). Overall, the influx on Helgoland was not as large as an invasion in 1993, when birds were thought to have originated in Scandinavia and the influx was later in the autumn (Dierschke *et al.* 2011b). Relatively small numbers of Lapland Buntings were reported in northern Germany, but a national record count of 230 was made just across the border at Gryfice, Poland, on 14th October (*Birding World* 23: 448).

In the Netherlands, the first record came from Heemskerk, Noordholland, on 28th August and numbers increased noticeably from mid September. The first large count involved 53 over Emmapolder, Groningen, on 28th September. In October, although there was a regular flock on Texel, which peaked at 100 on 8th, many records involved birds moving southwest over coastal sites, with a peak day-count of 78 over Westkapelle, Zeeland, on 22nd October; overall, numbers recorded in the Netherlands on the visible migration website http://trektellen.nl were ten times higher in 2010/11 than in 2009/10. In November and December some large flocks gathered in coastal areas, especially in the north: on 21st November there were 770 at five coastal sites in Groningen province, including 350 at Uithuizerpolder, and 550 nearby at Usquert on 26th December, while there were 260 in three flocks in Friesland on 28th December. Much smaller numbers remained into 2011, with no more than 70 at any one site, and only a few stragglers remained after early April (Roy Slaterus *in litt.*; http://waarneming.nl).

Belgium and France had far fewer birds, with none reported in France until one at Dunkerque, Nord, on 4th September 2010 (Yann Kolbeinsson *in litt.*), and none in Belgium until 11th September (http://waarnemingen.be). The largest single-site day-count in Belgium during the autumn was just six at Knokke on 15th October, although a flock of 29 flew over the same site on 20th November, while a few other flocks were discovered during the winter, including 26 at Blankenberge on 19th December and

27 at Schoeringebrug polders on 15th February (http://waarnemingen.be). The largest count in France in September was four at Réthoville, Manche, on 12th, but singles also reached the Atlantic coast, at Capbreton, Landes, on 6th and Cap-Ferret, Girondes, on 11th (Yann Kolbeinsson *in litt.*).

There was an unprecedented influx of more than 60 birds in Spain in autumn 2010, beginning on 12th September, when birds arrived at three sites, including eight at Cabo Peñes, Asturias. One was seen as far south as La Janda, Cádiz, on 15th September, a record flock of nine was at Baldaio, La Coruña, on 2nd November, and birds were seen at three sites until January or February 2011 (Gutiérrez 2010–11).

Up to seven in the Rheindelta, Austria, from 18th September 2010 into November (*Birding World* 23: 448, 473), and singles in Switzerland, near Fribourg on 26th September and near Thurgau on 12th November (*Birding World* 23: 383, 473), are probably also worthy of mention as birds that were presumably associated with this movement.

The 2010/11 influx in comparison with previous years

The 2010/11 influx of Lapland Buntings is certainly the best documented but it was not unique. There are records of large counts at individual sites as long ago as the early 1890s, when there were 60 at Ross (Northumberland) in January 1893 (Bolam 1912) and 100 overwintering at North Cotes (Lincolnshire) in 1893/94 (Lorand & Atkin 1989). The better-documented influxes include those of 1953, 1959 and 1960 (Williamson & Davis 1956; Davis 1960, 1961), all of which affected mainly northern and western Britain and Ireland. There have also been some major influxes into southern and eastern England (Brown & Grice 2005), but none of these have been as well documented. It seems likely, however, that the scale of the 2010 influx exceeds that of any earlier event.

Record numbers of Lapland Buntings were seen in many, but certainly not all, recording areas of Britain & Ireland in autumn 2010 (see Appendix 1). The influx began particularly early and the August records were often the earliest ever in their respective recording areas. August records are not unprecedented, though: there is a record from Foula on 19th August in an unknown year and several previous records from Fair Isle in the last few days of the month (Pennington *et al.* 2004), while there was a count of at least 15 on Tory Island on 27th August 1959 (Hutchinson 1989).

In the Northern Isles and Outer Hebrides, where Lapland Buntings are regular migrants, the numbers in autumn 2010 were exceptional and the scale of the influx was considerably larger than anything recorded before. In Shetland, double-figure counts had previously been recorded only from Foula (maximum 100 on 15th September 1966, but otherwise 35 on 28th September 2005), Out Skerries (maximum 30 on 18th September 1973), and Fair Isle, where the previous peaks were 80 on 12th September 1953, 90 on 13th September 1960, 80 on 16th September 1973 and 70 on 11th September 1987 (Pennington *et al.* 2004; *Shetland Bird Reports; Fair Isle Bird Observatory Reports*). In Orkney, the scale of the influx was even more remarkable, since the previous highest count was just 47 on North Ronaldsay on 3rd–4th October 1993. In the Outer Hebrides, autumn 2000, with a total of 160 birds, including a flock of 30 on St Kilda, was considered to be one of the best autumns on record (Forrester *et al.* 2007). Elsewhere in Scotland, the largest counts have involved wintering flocks on the east coast between 1950 and 2000, the biggest being 70 at Aberlady (Lothian) in November 1956; peak counts of migrants during autumn 2010 were unprecedented for several mainland and west-coast recording areas, notably Argyll, Caithness, Fife and Highland (Forrester *et al.* 2007). In their analysis of the invasion in Scotland in autumn 2010, Rivers & Forsyth (2012) suggested that over 5,000 individuals, perhaps many more, could have been involved. It is very difficult to come up with a figure for the whole of Britain & Ireland, although it seems almost certain that a five-figure total would have occurred.

The relatively small numbers noted in Northern Ireland in 2010, about 25 individuals in total, were considered to be exceptional since there are only about 70 other records for the province, although these include a flock of 11 on the coast of Co. Down in 1993 (Charles & Crory 2011). In the

rest of Ireland, however, the 2010/11 influx was comparable with some earlier influxes, notably that of 1953, when a total of about 300 was seen at Inishtrahull and Malin Head (Co. Donegal) and Magilligan Point (Co. Derry) (Hutchinson 1989). The numbers in Wales were unprecedented, since the previous record count was just 34, on Ramsey Island (Pembrokeshire) in the autumn of 1993. In 2010, records were broken along most of the west coast in October and November (Anglesey, Caernarfonshire and Ceredigion, although the Ramsey count remains the record for Pembrokeshire), and also on the south coast (Gower). On the Isle of Man, the peak count of 25 was the highest for the island by some margin.

The numbers involved in several recording areas in central, southern and western England broke existing records. Inevitably, the counts for some of these areas were relatively modest, and because of the rarity of the species inland, together with the fact that many records were of birds flying over, perhaps not all the sightings will be formally accepted. On the south coast, the counts from Hampshire (c. 80 in total) were described as unprecedented, while the numbers in Sussex (c. 69 in total) were similar to the 60–80 birds in 1956, the only comparable year (*Sussex Bird Report* 2010). In Devon and Dorset, numbers were well above average – for example, total numbers on Lundy were similar to the previous record set in autumn 1953, when over 100 were thought to have occurred, while the 2010 maximum day-count of 33 on 7th October equalled that set on 15th September 1953 (Davis & Jones 2007). The remarkable numbers in Cornwall in late winter, up to 150 at Port Isaac, were unprecedented (previous peak count of 65 at Reskajeage, Camborne, in early November 1987). On Scilly, the peak count of c. 20 in late September/early October occurred during the migration (rather than wintering) period, and although one of the best years on record, the highest counts fell well short of those in autumn 1956, when at least 50 were seen on Bryher on 25th September (Flood *et al.* 2007). Farther north, numbers were well above average, if not record totals; for example, there were about 40 in Lancashire in autumn 2010, where there had been only about 200 previous records, but with an exceptional count of 31 in 1980 (White *et al.* 2008; *Lancashire Bird Report* 2010).

For many east-coast counties in England, totals were above average but not record-breaking. For example, in Norfolk, the peak count of about 100 in autumn 2010 has been equalled or exceeded in six other winters (Taylor *et al.* 1999; *Norfolk Bird and Mammal Reports*), while Yorkshire has recorded far higher totals in the past: the highest count at Spurn was 230 on 15th November 1956 (Brown & Grice 2005) and there was a peak count of 416 on 28th October at Flamborough Head in an exceptional spell in late October and early November 1993 (*Flamborough Bird Report* 1993). This pattern was reflected right the way down the English east coast: Northumberland (peak autumn 2010 count 60, on 1st November cf. a record count of 97 there in November 1986); Co. Durham (15 on 18th September cf. 30 at Sunderland in December 1986); Cleveland (45 on 12th October cf. 130 between Redcar and Marske in January 1980); Lincolnshire (83 on 26th December cf. 350 at Butterwick in January 1986); Suffolk (7 on 22nd September cf. 100 at Sudbourne Marshes on 13th January 1991); Essex (28 on 30th January cf. 70 at Holland Haven in November 1985); Kent (13 on 12th September cf. 200 at Allhallows in November 1985) (Piotrowski 2003; Brown & Grice 2005; Wood 2007).

The spring passage in Scotland in 2011 was also unprecedented. The largest spring flock recorded anywhere in Scotland in the past was just six birds (Forrester *et al.* 2007).

The likely origins of Lapland Buntings in 2010

The origins of Lapland Buntings occurring in Britain have been the source of some debate (e.g. Garner 2007). The putative Greenland race *C. l. subcalcaratus* is poorly differentiated from nominate *lapponicus*, which breeds in Scandinavia and farther east. The Greenland race is slightly larger, but otherwise practically identical to *lapponicus*. Although *subcalcaratus* was recognised as a separate race by *BWP*, the two are treated as synonymous by other authorities (including *HBW*). The race *subcalcaratus* was not formally recognised by

BOU (1971) and is not on the current British List (Dudley *et al.* 2006), although there have been some investigations by BOURC to determine whether or not it can be proved that Greenland birds do occur.

It seems clear that many birds in Britain do originate from populations of the nominate race in northern Eurasia, especially Fennoscandia, which seems likely to be the source of the relatively small and erratic wintering populations along the east coast of Britain and occasional large influxes into southern and eastern England (Lack 1986; Wernham *et al.* 2002). Measurements of birds wintering in these areas also indicate Scandinavian origin (Wernham *et al.* 2002). As discussed in the previous section, many county records in these areas were established in 1956, 1985, 1986 or 1993, and these movements presumably originated in northern Eurasia.

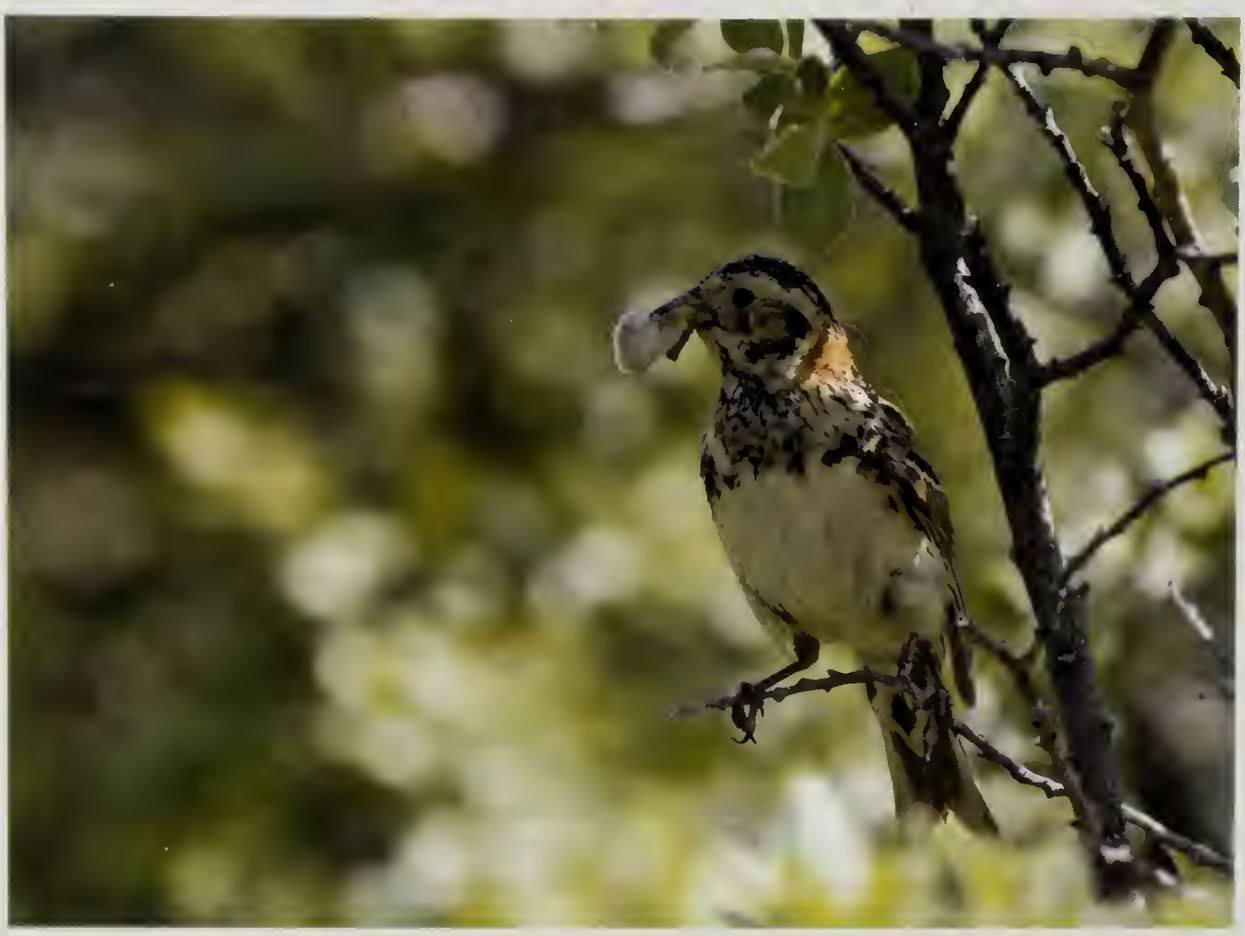
Nevertheless, there is long-standing evidence to suggest that birds may also originate from the northwest, most probably from Greenland, a suggestion that was first mooted following several influxes in the middle of the twentieth century (Williamson & Davis 1956; Davis 1960, 1961). Significantly, the 1959 influx was accompanied by unprecedented numbers of Greenland Redpolls *Carduelis flammea rostrata* (Davis 1960). Measurements of birds trapped on Fair Isle have also suggested an origin in Greenland (Garner 2007), but differences in the biometrics of the two races are small, with much overlap; Mjøs (2007) pointed out that Norwegian-breeding birds of the nominate race may approach *subcalcaratus* in size.

Circumstantial evidence is overwhelmingly in favour of the great majority of birds in the 2010 influx having originated from the northwest: the influx began in Iceland; it produced record numbers in many western areas of Britain, but not in the east; and the arrivals elsewhere in Europe showed a westerly bias, whereas numbers farther east in Europe were unexceptional (for example, the numbers in Sweden, see above). Presumably, some birds did arrive in eastern Britain from Fennoscandia during autumn 2010, but there is no evidence that these numbers were any higher than usual.

In Greenland, the Lapland Bunting is an abundant breeding passerine, although there is little hard data on absolute population size or trends. Tony Fox (*in litt.*) memorably described Lapland Buntings in west Greenland in a good year as 'passerine plankton',

Tim Melling

390. Male Lapland Bunting, Ilulissat, Greenland, June 2012.



Sonja Ross

391. Female Lapland Bunting, Greenland Arboretum, Narsarsuaq, Greenland, June 2012. Variation in the breeding productivity of Lapland Buntings in Greenland appears to be linked to cycles in the populations of certain species of noctuid moths, in particular the Great Brocade *Eurois occulta*, and an exceptional breeding season in 2010 seems most likely to be the main factor behind the numbers in Britain & Ireland in the following autumn.

and continued: 'To see the product of a successful breeding season tumbling off the plateau in the *Salix glauca*-dominated runnels during late August and early September is to see one of the little-known but impressive sights of interior west Greenland!' Breeding productivity and population size of Greenland Lapland Buntings is most likely to be linked to boom-and-bust patterns in key food sources. Although *BWP* gives dipteran larvae as the most important food source for nestlings, it is likely that lepidopteran larvae are the main food source in Greenland, at least in good breeding seasons. Peaks in the breeding productivity of Lapland Buntings in Greenland appear to be linked to cycles in the populations of certain species of noctuid moths, in particular the Great Brocade *Eurois occulta*. This moth is restricted to Low Arctic or subarctic west Greenland and southernmost east Greenland, but it has periodic and occasionally dramatic population explosions (Jensen & Christensen 2003). In outbreak years, these moths have a significant effect on the local biota, stripping Grayleaf Willow *Salix glauca* bushes for preference, but the caterpillars provide rich and easy pickings for breeding Lapland Buntings. In a study comparing the breeding biology of Lapland Buntings in west-central Greenland in two contrasting summers, there was significantly higher nesting success in 1979, when there was a superabundance of Great Brocade caterpillars, compared with 1984, when caterpillars were relatively scarce (Fox *et al.* 1987). In 1979, caterpillars were often piled dead or dying beside Lapland Bunting nests, as there were too many to be consumed immediately by nestlings.

In 2010, there were reports of an abundance of Great Brocade caterpillars in Greenland, such as at the Aarhus University research station near the capital Nuuk, in the southwest (Jensen & Rasch 2011). In addition, David Stroud was carrying out monitoring work on Greenland White-fronted Geese *Anser albifrons flavirostris* in an area of west-central Greenland during July in 2008,

2009 and 2010, and he confirmed a super-abundance of the Great Brocade in 2010: 'Judging from the abundance of adult moths, 2008 was a year of low moth abundance, there were many more in 2009, and they were phenomenally abundant in 2010 (on a par with what we witnessed in 1979).' It is not certain how widespread the Great Brocade boom was, and how far up the east coast of Greenland it extended, although, as already described, the range of this moth is normally very restricted in east Greenland.

There are high densities of breeding Lapland Buntings in parts of east Greenland, even if they are not as common there as in the west. The Lapland Bunting is a reasonably common breeding bird at Heden, Scoresby Sound, at 71°N (Glahder *et al.* 2011), and has bred as far north as the Aarhus University research station at Zachenberg (74° 30'N; Hansen *et al.* 2012). Indeed, it may well be spreading north, but knowledge about this species in east Greenland is fragmented and patchy (Tony Fox *in litt.*). Lapland Buntings breeding in east Greenland, the nearest *subcalcaratus* populations to the Western Palearctic, will not have benefited from the Great Brocade boom in 2010, being to the north of that moth's range, although it is possible that other noctuid moths may have similar population cycles, and these could be synchronous with those of *E. occulta*.

In 2010, weather conditions presumably contributed to the large arrivals of Lapland Buntings in Europe. Forsyth (2011) analysed weather patterns in autumn 2010 and showed that conditions were conducive for arrivals from Greenland. From late August to late September, a series of complex low-pressure systems moved eastwards across the north Atlantic, some passing close to southwest and southern Greenland, while high pressure became established over eastern Greenland and to the west of Iceland (see fig. 3; examples shown for 25th August, just prior to the first arrivals in Britain, and 24th September, just before the largest arrivals in northern Britain). These conditions may have encouraged Lapland Buntings to leave Greenland on a southeasterly heading rather than southwest into North America (Williamson & Davis 1956; Forsyth 2011).

Nearly all of the Lapland Buntings breeding in Greenland are likely to winter in North America. Although there is little hard evidence (i.e. ringing recoveries) to substantiate it, Lapland Buntings breeding in west Greenland presumably take a great-circle route down into Labrador, en route towards wintering areas around the Great Lakes and in the central plains. Birds breeding in east Greenland presumably also move southwest into North America, although it seems logical that some could winter in Europe, perhaps even on a regular basis. Certainly, northernmost breeding birds in east Greenland would have a significantly shorter route to potential wintering areas if they migrated through

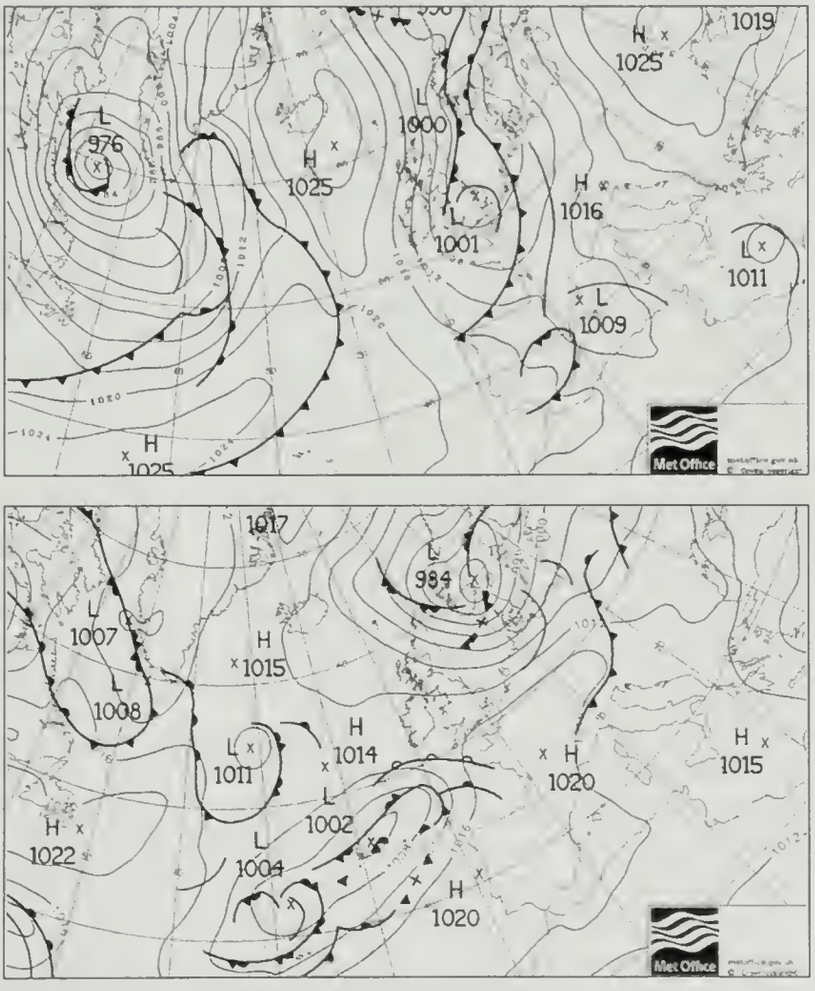


Fig. 3. North Atlantic surface pressure charts for 25th August (top) and 24th September 2010 (bottom).

Iceland to northwest Europe. There is some supporting evidence for the theory that birds in east Greenland may occur regularly in the Western Palearctic, despite the relative scarcity of the species on migration in Iceland. Lapland Buntings are regularly recorded in western Britain & Ireland, even in years when there are few birds in eastern Britain. In Ireland, the species is most frequent on Atlantic coasts (Hutchinson 1989; this study). In Scotland, Lapland Buntings are regularly recorded from the most westerly island group, St Kilda in the Outer Hebrides, yet other scarce migrants which are typical components of falls of Scandinavian origin on the east coast of Britain (e.g. Red-backed Shrike *Lanius collurio* and Bluethroat *Luscinia svecica*) are much rarer there (Murray 2002; Forrester *et al.* 2007). Logically, these regular arrivals of Lapland Buntings in the west will be of birds from Greenland.

It is also possible that Lapland Buntings, along with Snow Buntings *Plectrophenax nivalis*, may change wintering areas from year to year, perhaps in response to weather conditions during migration, and that birds breeding in some areas may winter either side of the Atlantic in different years (Lyngs 2003); a Snow Bunting ringed on Fair Isle in April 1959 and recovered in Newfoundland in May 1960 lends some credence to this theory (Wernham *et al.* 2002; Pennington *et al.* 2004).

In summary, it seems clear that the massive influx of Lapland Buntings in northwest Europe in 2010 resulted from the coincidence of two factors: conditions in Greenland that provided abundant food, enabling birds to produce a bumper crop of offspring; and autumn weather conditions that encouraged birds to migrate southeast towards Europe. Although there is a lack of hard evidence to prove it, it seems that the population in east Greenland is the most likely source of invasions such as this, although it is possible that, in exceptional circumstances, and perhaps in 2010, birds from the much larger west Greenland population could also be involved. It seems highly likely that invasions of Lapland Buntings from Greenland have occurred in the past, and will continue to occur, periodically, in northwest Europe in the future, although it may be some time before we enjoy another influx on the scale of that of 2010.

Acknowledgments

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Appendix 1. Peak single-site counts of Lapland Buntings *Calcarius lapponicus* in UK recording areas during the 2010/11 influx. Areas where a new single-site record count was made are shown in bold.

	peak count	date	site
Anglesey	70	14th October	Hen Borth
Angus & Dundee	5	25th–26th September	Scurdie Ness
Argyll	160	13th October	Tiree
Avon	4	20th October	Clevedon coast
Ayrshire	5	30th October	Barassie
Bedfordshire	2	23rd–25th October	Galley Hill
Berkshire	1	16th–17th October	Remenham Hill
Borders	9	12th October	St Abbs Head
Breconshire	0		
Buckinghamshire	3	12th October	Steps Hill
Caernarfonshire	37	8th October	Bardsey
Caithness	30	5th September	Holborn Head
Cambridgeshire	1	4th September/4th October	Fen Drayton/Nene Washes
Carmarthenshire	1	9th October	Coedbach
Ceredigion	15	27th November	Llanon
Cheshire & Wirral	3	8th October	Hale
Cleveland	45	12th October	Seaton Common
Clyde	0		
Clyde Islands	4	10th April	Isle of Bute
Cornwall	150	6th March	Port Isaac
Cumbria	1		
Denbighshire	0		
Derbyshire	1	(singles on seven dates)	
Devon	33	7th October	Lundy
Dorset	6	10th and 19th November	West Bay/Hengistbury Head
Dumfries & Galloway	3	29th September–15th December	Mull of Galloway
Co. Durham	15	18th September	Whitburn Steel
East Glamorgan	1		
Essex	28*	30th January	Mersea Island
Fair Isle	195	28th September	
Fife	70	16th October	Wormiston
Flintshire	0		
Gloucestershire	1	singles 9th Sep, 16th Feb, 1st Apr	Slimbridge
Gower	46	26th November	Paviland
Greater London	9	16th September	Stoke Newington Resr
Greater Manchester	1		
Gwent	0		
Hampshire	56	29th November	Keyhaven
Herefordshire	0		
Hertfordshire	0		
Highland	71	2nd September	Blairmore, Kinlochbervie
Isle of Man	25	12th September	Point of Ayre
Isle of May	5	10th and 27th September	
Isle of Wight	4	10th–11th December	Brading
Isles of Scilly	20	21st–26th September	St Agnes, Bryher
Kent	13	12th September	Grain
Lancashire & N Merseyside	3	2nd October/23rd December	Seaforth/Hesketh Out Marsh
Leicestershire & Rutland	2	5th–6th October	Sence Valley Forest Park
Lincolnshire	83	26th December	Frampton Marsh
Lothian	45	19th September	Barns Ness
Meirionnydd	0		

Montgomeryshire	0		
Moray & Nairn	6	10th November	Inchrory, Glen Avon
Norfolk	100	2nd October/14th November	Happisburgh/Sheringham
Northamptonshire	0		
North-east Scotland	38	9th October	Loch of Strathbeg
Northern Ireland	4	25th September to 6th October	Ramore Head, Co. Antrim
Northumberland	60	1st November	Holy Island
Nottinghamshire	3	16th September	Annesley Pit Top
Orkney	272	27th September	North Ronaldsay
Outer Hebrides	350	3rd October	South Uist machair (Bornish/Rubha Ardvule/ Howmore)
Oxfordshire	0		
Pembrokeshire	20	16th October	Dale Airfield
Perth & Kinross	6	10th April	Beinn a' Ghlò
Radnorshire	1	29th September	Clyro
Shetland	105	24th September	Foula
Shropshire	0		
Somerset	3	12th October/6th November/ 26th November	Brean Down/Stockland Reach/Steart
Staffordshire	3*	13th October	Black Bank
Suffolk	7	22nd September	Kessingland
Surrey	2	17th September	Beddington SF
Sussex	10	22nd October	East Guldeford
Upper Forth	0		
Warwickshire	7*	27th October	Draycote Water
West Midlands	0		
Wiltshire	2	18th October	Rodmead Down
Worcestershire	5	20th September	Malvern Hills
Yorkshire	125	10th November	Buckton

* Not accepted/under consideration by the relevant local records committee

Will Miles

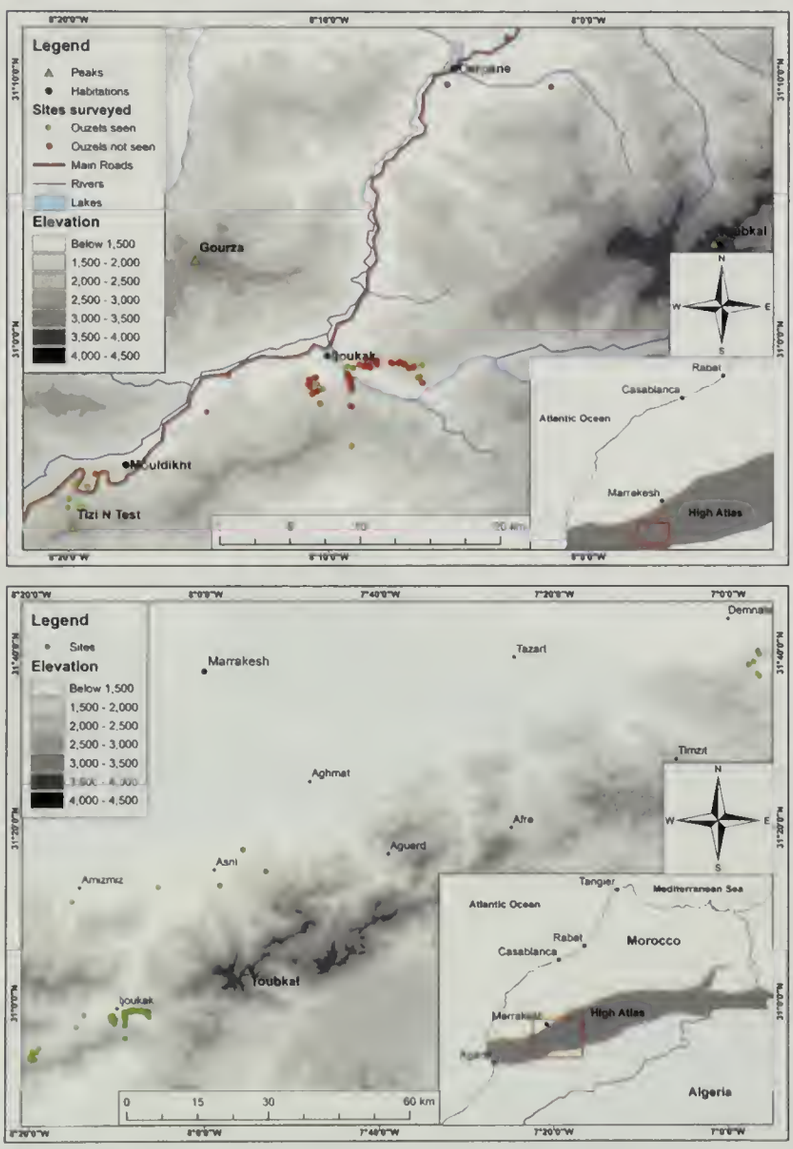
Lapland Buntings on Fair Isle.

Short papers

Habitat associations and winter distribution of Ring Ouzels in the Atlas Mountains, Morocco

Abstract The breeding population of the Ring Ouzel *Turdus torquatus* in Britain has declined and the species is now Red-listed. Since clutch size and fledging success remain stable, factors in the wintering range and/or on migration may be responsible for the decline. We found the Ring Ouzel to be widespread, yet patchily distributed in the High Atlas Mountains of Morocco. A strong association was found between the birds' distribution, fruiting juniper *Juniperus* and water sources, although large areas of apparently suitable habitat with abundant berries did not hold Ring Ouzels. The human impact on juniper woodland is discussed.

The Ring Ouzel *Turdus torquatus* is a summer visitor to upland areas of central and northern Europe, and winters mainly around the Mediterranean basin and in North Africa. In Britain, the breeding population of Ring Ouzels has been declining since at least the 1970s and the species is now Red-listed (Tyler & Green 1994; Heath *et al.* 2000; Wotton *et al.* 2002; Eaton *et al.* 2009; Sim *et al.* 2010). Elsewhere in Europe, populations have been considered stable but in recent years declines have been noted in the Alps, including Switzerland (von dem Bussche *et al.* 2008).



Figs. 1 & 2. The core study area (fig. 1, top) and the wider study area (fig. 2), in the Atlas Mountains of Morocco.

The reasons for the decline in Britain are unclear but have been attributed to a range of factors including habitat change in both breeding and wintering areas, climate change, predation and hunting pressures during migration (Tyler & Green 1994; Beale *et al.* 2006; Ryall & Briggs 2006; Sim *et al.* 2010). In Britain, clutch size and fledging success remain stable (Sim *et al.* 2010), which suggests that population drivers may lie beyond the breeding grounds. Rather little is known about Ring Ouzels after they leave the breeding areas but the importance of juniper *Juniperus* berries as a key food source in the wintering areas is well known (e.g. Snow & Snow 1988, Zamora 1990, Arthur *et al.* 2000, Ryall & Briggs 2006).

Study area and methods

This study looked at Ring Ouzels and their habitat in an area of the Atlas Mountains in Morocco (fig. 1). The core study area was based around the village of Ijoukak, with further sites along the Oued Nfiss between Tizi-n-Test in the southeast and Oergane to the northeast. Reconnaissance visits in 2005 and 2006 were followed by surveys in December 2007, November 2008 and December 2009/January 2010. Eight transect routes of around 4 km in length were walked in juniper habitat; details of altitude and aspect, the presence/absence of water, juniper density, number of fruiting junipers and presence of grazing and cutting were recorded at regular points along the transects. Whenever Ring Ouzels were encountered, the same information was recorded, along with the number of Ring Ouzels and other thrushes. Transects were chosen to utilise existing pathways that covered a range of altitudes and aspects. Four transects were repeated in all three study winters; two more were walked in two winters (making 18 transects in total). In addition, all casual sightings of Ring Ouzels between transects were recorded, with full habitat data.

Mick Green

392. A view of the study area, in the Moroccan Atlas Mountains.

Further areas were also visited to assess the wider distribution of Ring Ouzels in the Atlas Mountains. Sites to the east and northeast of Amizmiz were surveyed using the same transect methodology (fig. 2); these overlapped with transects surveyed by Ryall & Briggs (2006). Potential transect locations were identified from a combination of prior knowledge, maps and scanning wide areas from good vantage points.

Results

Habitat in the core study area

The area was characterised by steep-sided valleys and associated ridges covered with scrub woodland dominated by Phoenician Juniper *J. phoenicea* mixed with varying densities of Prickly Juniper *J. oxycedrus* (plate 392). Thuya *Tetraclinis articulata* was present in limited areas and Holm Oak *Quercus ilex* was generally restricted to higher altitudes. Spanish Juniper *J. thurifera* was absent from the study area. Juniper bushes varied in size but were generally 2–3 m in height and approximately 2 m across.

Numbers recorded

Including casual sightings, a total of 58 recording points were surveyed within the study area (many were surveyed two or three

Table 1. Sightings of Ring Ouzels *Turdus torquatus* in the study area and the numbers recorded.

	No. of recording points at which Ring Ouzels were seen[1]	Total no. birds	Mean no. birds per point	Adjusted mean[2]
2007	12 (2)	41	3.4	1.9
2008	9 (1)	35	3.9	3.1
2009/10	5 (2)	37	7.4	2.4
Total		113	4.9	2.5

[1] Casual recording points in parentheses; [2] flock counts removed.

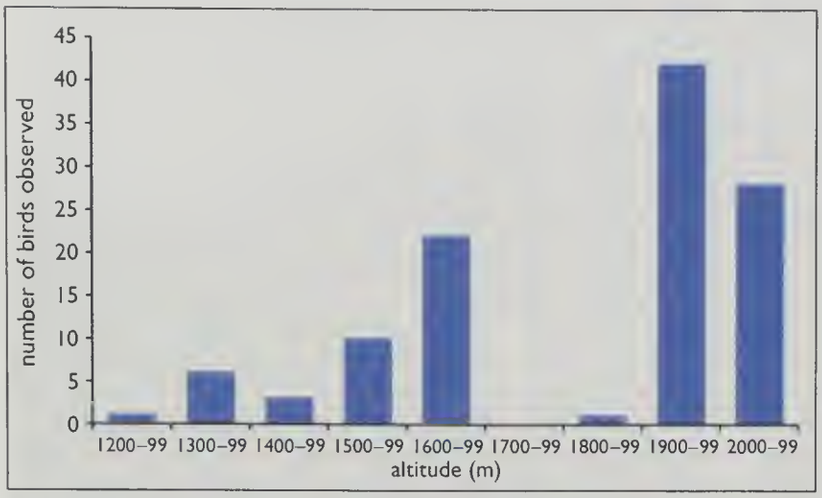


Fig. 3. Sightings of Ring Ouzels in the study area in relation to altitude.

times) and Ring Ouzels were found at 19 of these (details in table 1). Most sightings were of birds in small, loose groups, but four larger flocks were encountered: one of 20 in 2007, one of 10 in 2008, and 20 and 12 in 2009/10. In 2007, we found Ring Ouzels associating with other thrush species (Blackbird *T. merula*, Song Thrush *T. philomelos*, and Mistle Thrush *T. viscivorus*) at three transect points (25% of all Ring Ouzel sightings); comparable figures for 2008 were five (56%) and 2009/10 two (40%).

Altitude

Ring Ouzels were recorded between 1,290 m and 2,092 m above sea level (fig. 3). Below 1,290 m apparently suitable Ring Ouzel habitat was surveyed but no birds were recorded.

Association with gullies and water

Of the total of 113 Ring Ouzels observed, 99 (88%) were seen within 100 m of visible surface water (mostly gullies with residual water or seepage from rocks). Of those that were not near water, most were in dry gullies that led to water in the valley below or may have held hidden pockets of seepage. Very few Ring Ouzels were recorded on the dry, open hillsides that comprised the majority of the study area.

Association with juniper

Phoenician Juniper was the dominant species, present at 82.1% of the 58 recording points; Prickly Juniper was recorded at 52.7% of points but was rarely the dominant species. Holm Oak was recorded at 39.3% of points, becoming the dominant species above 1,900 m; Thuya was recorded at some points but never as the dominant species.

Juniper was present at all recording points where Ring Ouzels were recorded. Those where Phoenician Juniper was the dominant shrub accounted for 65% of all Ring Ouzel sightings; for Prickly Juniper the equivalent figure was 29% and for Holm Oak 8%. No birds were observed in association with Thuya. At most recording points, Phoenician Juniper was the dominant juniper species and was the more prolific fruiter of the two. Prickly Juniper was frequently not in fruit and where fruiting bushes were present the berries were less dense than on Phoenician Juniper.

Cutting (mainly for firewood) and grazing were widespread throughout the study area. Many junipers had been subject to some degree of cutting, especially near paths and on less steep slopes. Some 81% of all Ring Ouzel sightings were at sites that showed evidence of cutting, of which about one-third was recent and two-thirds was older activity.

Wider distribution

Surveys beyond the core study area were made between 2005 and 2008. A total of nine transects were undertaken, all surveyed only once apart from one visited on two occasions; the recording methodology was similar to that in the core study area. All areas surveyed were potentially suitable for ouzels, with juniper present, particularly Phoenician Juniper. However, some lacked fruiting juniper, while at others the juniper formed a denser woodland, often mixed with Holm Oak. No Ring Ouzels were recorded at any of the sites outside the core study area.

Discussion

This study provides further support for an association between wintering Ring Ouzels and juniper, especially Phoenician Juniper. Prickly Juniper was present in lower densities, and had proportionately fewer berries. All sightings in the core study area were at sites

with large numbers of well-stocked fruiting junipers, many with berries on the ground below the bushes too. There was no obvious relationship between tree density and Ring Ouzel sightings, and the structure of the juniper woodland varied considerably between sites. Within the core study area, Ring Ouzels were recorded at the same sites in each of the three study winters. Our transects confirmed a surplus of apparently suitable wintering habitat and food supply and also that Ring Ouzels avoided juniper stands that were not fruiting. However, Ring Ouzels were not recorded from some stands of fruiting juniper, despite repeated visits, and we assume that factors other than juniper alone affect site occupancy. Access to water may be one limiting factor for a bird that appears to feed almost exclusively on fairly dry berries and the vast majority of our sightings were within 100 m of a water source.

Site disturbance and habitat degradation appear to have little impact on Ring Ouzel distribution. All the sites we visited showed evidence of widespread but low-level cutting, but we rarely found that whole bushes had been removed. This cutting may in effect 'coppice' the juniper and may even stimulate new growth and berry production. With thousands of hectares of juniper scrub in the study area and beyond, it seems that the disturbance and habitat degradation that takes place has little or no impact on wintering Ring Ouzel numbers. Juniper is long-lived, but we know of no studies on the long-term effects of human cutting, or for how long the shrub can continue to regenerate. Although much of the juniper in the study area appeared to be in good condition, no regeneration was seen and the lack of recruitment is of concern to the long-term survival of juniper woodland.

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Nineteenth-century ornithology, Leadenhall Market and fraud

Abstract Following recent contributions in *BB*, this paper discusses some contemporary references to London's Leadenhall Market as a source of specimens and explores the nature of investigations of notable records in the 'early days' of standardised ornithology. Collectors and ornithologists were well aware of the potential for fraud and their working methods were developed to minimise the possibility of it. Reliability of information was a key consideration and great care was taken to ascertain the provenance of records.

I very much enjoyed reading the recent articles in *BB* on Leadenhall Market as a potential source of rare birds (Collinson 2012) and on ornithological fraud (Harrop *et al.* 2012), and have been following reassessments of historical records with great interest. I have been investigating the biography and activities of Henry Eeles Dresser (1838–1915), one of the leading ornithologists of the late nineteenth and early twentieth centuries, for some time and considered it worth elaborating on the working methods of nineteenth-century naturalists in relation to these topics.

Working styles

Although bird recording is a popular pastime today, few would claim that it represented the pinnacle of scientific endeavour. This was not so in the nineteenth century, when collecting reliable facts and hard empirical evidence, notably records of distribution and the geographical limits of animal and plant life, was an important scientific activity (see Pickstone 2001). This is demonstrated by the leading roles that collectors and those interested in faunistics played in major scientific societies such as the Zoological Society of London and the BOU (and BOC). Bird collecting was most closely associated with the upper classes and the growing middle classes who emulated their aristocratic 'superiors'. During this period, leading collectors, who were most successful in acquiring desirable specimens by exchange and purchase, published articles and books based on their own collections. Each typically specialised on a particular group of birds, or birds from a particular region; few had the resources to build encyclopedic collections (Walter Rothschild was one of the last) and it seems probable that they avoided unnecessary competition by collecting in this way. Their choice of collecting subject was often influenced by their personal travels, often the result of business. For example, Henry Dresser travelled extensively in North America and Europe in the timber and iron businesses, and collected American and European birds as a consequence.

More active enthusiasts became 'professed naturalists', operating at a time when the distinction between amateurs and professionals was limited (since there were very few professionals). This situation led to a number of self-motivated individuals becoming leading authorities on British birds. Among those active between the 1870s and 1890s could be counted Henry Dresser, who worked full-

393. Henry Dresser, aged 27.

time as a metal agent in London; Henry Seebohm, who owned a steel mill in Sheffield but was largely free from work; Howard Saunders, who gave up banking for natural history, probably due to ill health; John Henry Gurney Jr, from a Norwich banking family; and Edmund Harting, who edited the natural history columns of both *The Field* and *The Zoologist* (which illustrates the close relationship between field sports and natural history at that time). In terms of professionals, Alfred Newton was Professor of Zoology and Comparative Anatomy at Cambridge and was the leading light of ornithology in Britain, while Richard Bowdler Sharpe at the British Museum (Natural History) was busy building the museum's collection at a phenomenal rate.

Investigations of notable occurrences

In an early example of an investigation of specimen records, John Henry Gurney Jr analysed the supposed occurrences of the Black Woodpecker *Dryocopus martius* in Britain (which had been presented by Edmund Harting in *The Zoologist* in 1865 and in his *Birds of Middlesex* – notable as the first county avifauna – in 1866). The results were published in *A History of the Birds of Europe* (Sharpe & Dresser 1871) and none of the records stood up to close scrutiny; for example, one specimen that had been bought in Leadenhall Market turned out to have come with gamebirds from Scandinavia.

Henry Dresser was subsequently involved in the investigation of other notable records during the preparation of his books. This often involved direct examination of specimens and he frequently exhibited notable specimens, often on behalf of others, at the fortnightly meetings of the Zoological Society of London. The most amazing was undoubtedly a Blue-tailed Bee-eater *Merops philippinus*, supposedly shot on a slag heap on the banks of the River Tees in August 1862 (the specimen is now lost, unfortunately). The published account states how: 'Mr. Dresser observed that it was rather singular that this remote southern and eastern species, which had never previously been recorded from any part of Europe, should have been shot in Great Britain' (Dresser 1883).

Less prosaic was Dresser's handwritten note on the occurrence in his personal copy of John Hancock's *Catalogue of the Birds of Northumberland and Durham* (Hancock 1874), now in John Rylands Library, Manchester: 'Delete!... A Mistake!' Dresser annotated many of Hancock's other records of rare birds (and erroneous statements) with an emphatic 'Oh!' – perhaps implying that he did not believe them to be true. Other investigations included those of a Blue Rock Thrush *Monticola solitarius* specimen, supposedly shot in Co. Meath in 1866 (mounted from a prepared skin rather than a fresh specimen) and the identification of a Greater Spotted Eagle *Aquila clanga* shot in Cornwall.

Leadenhall Market, rarities and frozen birds

A number of leading naturalists were also prominent London-based merchants and bankers. They would often visit Leadenhall Market, presumably before or after work, or during their lunch break. Henry Dresser's office was on Cannon Street, where Henry Seebohm also had premises; Walter Rothschild's family bank was at New Court, just round the corner, while the Stock Exchange, Lloyd's and the Bank of England were all close at hand. Dresser acquired a number of birds from the market, notably gamebirds including a Capercaillie *Tetrao urogallus* of the eastern subspecies *uralensis* and various hybrid and gynandromorphic specimens, waterfowl, seabirds and waders, as well as some passerines (these specimens are now in the Manchester Museum). One particularly notable bird was a Pacific Golden Plover *Pluvialis fulva*, the first occurrence in Britain. Dresser wrote about the circumstances of its 'discovery' in *Ibis* in 1875: 'In December last Mr. Bidwell, a gentleman who visits Leadenhall Market regularly, to pick up specimens of rare birds and eggs at the game-dealers' shops, told me that he had seen an odd variety of the Golden Plover. I immediately went to the market, and found amongst a lot of Golden Plovers from Norfolk the specimen in question. It was badly damaged, and having been kept in the shop during mild weather for ten days, it had already become tainted, so that it was only with the greatest difficulty that it could be preserved; but I

have succeeded in getting it made into a passable skin. It closely resembles examples of *Charadrius fulvus* from Asia, and has most of the feathers on the upper parts margined with yellow.'

Unfortunately, this specimen too has been destroyed. While this bird appears to have been in the market as a corpse, naturalists were aware that many gamebirds came to Leadenhall in a frozen state. In *The Field* for 19th March 1898, W. B. Tegetmeier, a leading authority of poultry and domesticated birds, wrote about the presence of Daurian Partridges *Perdix dauurica* in Leadenhall Market. Dresser (1898) followed this report with a note in *The Zoologist* stating that this was the second time such birds had appeared in the market. Dresser wrote how he himself had seen the first lot unpacked: 'They were rolled in paper and hard frozen, and then packed in a large sugar-barrel, and arrived here in very good condition. The Daurian Partridge... inhabits Eastern Siberia, the Amoor [*sic*] country, Dauria, &c., ranging south through Mantchuria [*sic*] and Mongolia to North China, and west to the Tian-Shan Mountains in Turkestan; so that the birds sold here must have traversed a great distance in a frozen state before reaching this country.' Dresser recorded how Przevalski's Partridges *Alectoris magna* ('*Caccabis magna*') were on sale at the same time, the range of this form being 'South Koko-nor Mountains, Northern Tibet, and the Tsaidam plains'.

Another notable specimen that Dresser acquired from Leadenhall was one of two Lesser Snow Goose *Anser c. caerulescens* specimens that originated from Co. Wexford in November 1871. Howard Saunders, who discovered the birds in the market, exhibited them at the Zoological Society of London and made it clear that he had ensured that they had not been frozen (Saunders 1872). Dresser had this bird illustrated for the *History of the Birds of Europe* (Dresser 1873).

Fraud

At least some of the leading collectors were alive to the possibility of fraud, particularly by commercial dealers. Alfred Newton wrote advisory notes for egg-collectors in 1860 (which were reprinted in 1894, reflecting their continuing importance) emphasising that 'the main points to be attended to, as being those by which science can alone be benefited, are IDENTIFICATION and AUTHENTICATION' (Newton 1860). 'Authentication' was a way of assessing the

394. Birds obtained by Dresser from Leadenhall Market, including gamebirds (a Capercaillie *Tetrao urogallus uralensis*, a male Black Grouse *T. tetrix* and a hybrid male Black x Red Grouse *Lagopus lagopus*, all obtained in Scotland), ducks (Gadwall *Anas strepera* and Pintail *A. acuta*) and a Pomarine Skua *Stercorarius pomarinus*.

character of collectors and dealers, of establishing who had actually been involved with a particular specimen. It had little to do with bird biology but everything to do with whose word one was prepared to accept. Consequently, the leading collectors preferred to deal directly with one another as a circle of trusted friends. They went to great lengths to protect the reputation of themselves and their collections, and this should not be underestimated when reassessing records.

In spite of the best efforts of collectors, a number of frauds were perpetrated upon them by commercially motivated individuals. Alfred Newton was offered Pallas's Sandgrouse *Syrrhaptes paradoxus* eggs supposedly taken in Norfolk. After a lengthy investigation over many weeks, he found that 'A most disgraceful attempt to impose upon me, and naturalists generally, had been made' (Newton 1905). The investigation involved Dresser and a number of others. The most overblown attack on fraudsters appeared in a letter by 'Oophilus' in *Ibis*: 'It has ever been the fate of true science to be attended by the false maiden who travesties her every step and parodies all her discoveries... We all deprecate the achievements of the gunner who stalks behind a hedge after every rare bird in his neighbourhood, and then chronicles his exploits in the pages of *The Zoologist*. Is the indefatigable "British-egg" collector a less mischievous depredator? ... Enough as to the indiscrete zeal of the true naturalist. There is another and larger class, the mere collectors, who gather eggs as they might accumulate old china or postage-stamps, to as little use and with as little scientific intent, and yet, sometimes, develop into practical naturalists. These are the victims of a system of imposture as gross, and far less ingenious, than the fictitious antiquities of Italy and Egypt... In oological beyond all other collections, dealers' specimens are most unsatisfactory; and from long acquaintance with the frauds of the trade, I would urge upon every young collector never to admit into his cabinet an egg purchased from a dealer' (Oophilus 1863).

Frauds were not confined to eggs. Seebohm, in the introduction to his *Geographical Distribution of British Birds*, published in 1893, wrote how errors could find their way into the British List: 'In some cases a mistake has been made in the naming of the examples, in others the examples have been correctly named but they were not obtained in the British Islands, having been changed either by accident or by design by a careless or fraudulent birdstuffer, or by a collector ignorant of the value of scientific accuracy. A third and very frequent source of error, which it is often impossible to avoid, is caused by the escape of imported birds from aviaries.'

Interestingly, Seebohm discusses at length the importance of detailing the circumstances of occurrences: 'Every scrap of evidence to prove that the example was actually procured in this country in an apparently wild state, and was examined in the flesh by absolutely trustworthy witnesses, is of the greatest interest and scientific value' (Seebohm 1893).

John Henry Gurney Jr was involved in a number of investigations of supposed occurrences of rare birds in Britain, including Harlequin Duck *Histrionicus histrionicus*, Spotted Sandpiper *Actitis macularius*, Eagle Owl *Bubo bubo*, Black Woodpecker, Short-toed Lark *Calandrella brachydactyla* and Pine Grosbeak *Pinicola enucleator*, among others. His investigations aimed to discover 'the truth, the whole truth and nothing but the truth' and demolished a number of notable records (Gurney 1876). Regarding the occurrences of the Pine Grosbeak, he adds the telling comment that: 'According to my experience, the shooters of such rare British birds as the Great Black Woodpecker, Spotted Sandpiper, and Pine Grosbeak are generally found to be dead when wanted to give evidence – an inconvenient circumstance which naturally casts some doubt on the marvellous statements attributed to them' (Gurney 1890). Oliver Aplin (1890) added that 'It is possible to make beautiful skins of the frozen (and thawed) Willow and Black Grouse, &c., purchased in the markets and shops, and I feel sure that these specimens could be set up months after they were killed in such a manner that it would be impossible to tell that they were not mounted from perfectly fresh specimens... So there is now an additional reason for suspecting the origin of Pine Grosbeaks and other northern birds said to have been killed in this country.'

Hastings Rarities

Henry Dresser was writing about birds at the time when the Hastings Rarities affair was in full swing. Both he and Howard Saunders included Hastings Rarities records in their publications. There is a very intriguing reference in a letter from Dresser to his friend John Harvie-Brown, written in 1890: 'I send, as it may amuse you, a communication I have *not* received "thankfully". I wrote a very civil reply and carefully evaded any opinion and I am now to have some further *new*? species to report on. All of course inhabit only that part of Kent – and I am receiving a letter of four sides every day' (Harvie-Brown archive, National Museums of Scotland).

It is not at all clear what Dresser is referring to, but having some 'new species' to report on almost certainly means records of rare birds that he would have to add into his *Supplement to A History of the Birds of Europe* (1895–96), which he was working on at the time. It seems incredible that here was some further intrigue regarding bird records in the south of England and it seems possible that this is related in some unclear way to the Hastings Rarities affair.

Summary

I have tried to draw out some of the clearest contemporary references to Leadenhall as a source of specimens, the extent to which collectors and ornithologists were aware of the potential for fraud, and the nature of investigations of notable records in the 'early days' of standardised ornithology. I hope to have shown that the leading naturalists were very aware of the potential for fraud, and indeed that their working methods were developed to militate against impostures. For these people, reliability of information was a key consideration and they often went to great lengths to ascertain the nature of records as their reputations were at stake – although this is not to say that they were infallible. I would also like to encourage close reading of contemporary reports, which can be easily done from internet archives (www.archive.org), and greater use of archival records and museum specimens.

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Letters

Leadenhall Market

Martin Collinson (*Brit. Birds* 105: 325–331) rightly stated that Leadenhall Market, in London, was the Mecca of British poultry and game markets, and I visited it quite often from the 1940s to 1965. Conscious of the still-then-widely-sourced supplies of wildfowl and gamebirds, I regularly scanned the slab and hung displays for unusual species. My constant hope was of a Great Snipe *Gallinago media*, but I found nothing more unusual than Pintail *Anas acuta* and Common Quail *Coturnix coturnix*. I have no memory of any passerines and no talk among busy stallholders other than the crux of rapid stock-turn in perishable food.

Collinson did not date any potential fraud later than 1907. I would add that from the late 1950s, given the soon widespread availability of cheap white meat, the profit from and interest in stocking a diversity of wild game became negligible. It follows that even the risk of market-originated fraud is not proven for a full century. Don't panic!

D. I. M. Wallace, Mount Pleasant Farm, Main Road, Anslow, Burton-on-Trent, Staffordshire DE13 9QE

One of the points that deserves comment about places such as Leadenhall Market is that, in addition to occasional records of dubious rarities, it could have provided more reliable information about what common birds were being killed in the past and where, not to mention the annual and seasonal variation in age, sex, race and plumage. It should be noted that in *Bird Haunts and Bird Behaviour* (1929, Hopkinson), in addition to an account of the market, Charles Raven included an important study of the plumages of the Shoveler *Anas clypeata*, which was omitted from *BWP*.

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Disturbance of rare breeding birds

Smith & Charman (2012) stated that Lesser Spotted Woodpeckers *Dendrocopos minor* 'can be very fickle when prospecting and excavating a nest cavity so disturbance should be minimised at this time' and further recommended that those finding breeding birds should 'look after' their birds. This eminently sensible advice stands at odds with an apparent presumption that the find will be publicised with consequent 'considerable demand from birdwatchers to view' the birds. Very few birdwatchers will have the time or resources to safeguard a nest-site from intensive viewing and photography and indeed the taking of eggs. Surely the most sensible way to minimise disturbance is not to publicise the whereabouts of a breeding site at all, at least not during the vulnerable period, nor indeed until the eggs have hatched. The demands of the wider community of birdwatchers should not be pandered to in such situations.

Kyran Kane, Castlebellingham, Co. Louth

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Avocets on Blakeney Point

I enjoyed the recent article in *BB* celebrating the centenary of Blakeney Point (Stubbings 2012). The introductory paragraphs include the statement: 'At that time [the 1880s], shooting wasn't confined to migrants and there are reports of people emptying their muzzle loaders into the Avocet *Recurvirostra avosetta* colony on their way home from the

Point'. I felt that readers might infer from this that there was an Avocet colony in Blakeney harbour in the late nineteenth century. In fact, the Avocet colony was actually at Salthouse, and had been wiped out in the 1820s. By 1851, when the sea defences were built and the Salthouse marshes reclaimed, Avocets were rare stragglers; Stevenson (1870) stated that a recently shot specimen – probably just prior to 1870 – was regarded as a great prize by local gunners. The tales of gunners targetting Avocets on the way back from the Point presumably thus refer to the beginning of the nineteenth century rather than any later.

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Deafness and birdwatching

To pick up the thread of correspondence on this topic in recent issues, I have been deaf for many years and now have a hearing aid in each ear. When my hearing was checked originally the frequency response dropped off sharply at about 1,000 Hz but the limit is now about 500 Hz. My solution for birdwatching is a portable loop system. This is a pocket amplifier with input from either an external or an internal microphone and output to a neck loop. The neck loop sends a signal to the hearing aids on 'T' setting. For birdwatching, I use an external microphone attached to my hat, where it is free of handling noise. A directional microphone has the advantage of emphasising sounds from the direction I am looking but can have a dead zone to the rear. Smaller, general-purpose microphones are omni-directional but may lack the frequency response of more sophisticated ones. The one I have used is a Hama RMZ-10 but something smaller and lighter would be more convenient. A company called Sarabec (www.sarabec.com), which specialises in gadgets for deaf people, has different models of amplifiers and the one I prefer is the Crescendo 20 plus, which has a large volume control dial which can be operated through the fabric of a pocket. A smaller, more modern model is the C50, which has a tone control dial instead of a three-position switch. It also has the advantage of running on AA batteries instead of 9 volt. All these amplifiers will also operate conventional headphones and can thus boost sound levels for people with adequate hearing – if they were better known, I suspect that they could become as common as binoculars.

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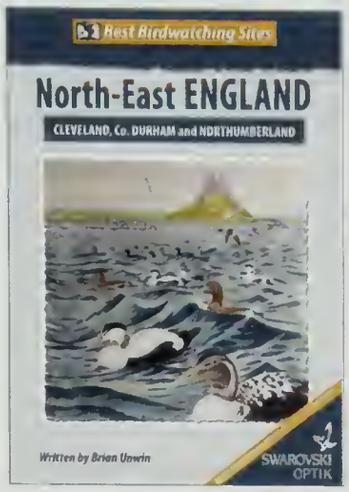
Reviews



Best Birdwatching Sites – North-East England

By Brian Unwin
Buckingham Press, 2012
Pbk, 308pp; maps and vignettes
ISBN 978-0-9569876-2-4 Subbuteo code M21389
£17.95 *BB* Bookshop price £16.00

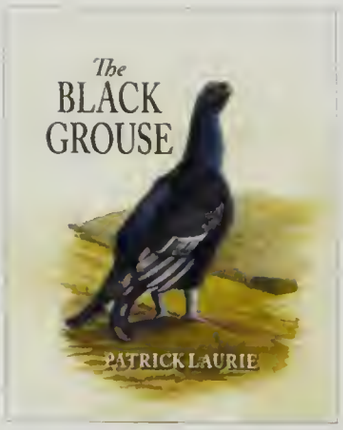
It is thankfully rare when an author fails to see his book published. This unfortunately was the case with Brian Unwin's eagerly awaited site guide in this series to birding areas in the Northeast, taking in Northumberland, Co. Durham and Cleveland. Brian died of cancer shortly after Christmas in 2011 at the early age of 66. As a founding member of the Durham Bird Club and with an encyclopedic knowledge of the whole area, he was well placed to write this site guide. Various friends and acquaintances ensured it was finished and published, including John Miles, Bob Coursey and Ian Kerr. The end product is a fitting testimony to Brian's character as it is eminently readable, often not the case with site guides as they can be quite bland. I had the good fortune to meet Brian on a number of occasions, most notably a chance encounter in the Harthope Valley in Northumberland when this jaunty chap with a straw boater introduced himself. His perky personality shines through this guide in the many snippets. My favourite is the idea of bagpipe players in the altogether at Skirl Naked and this image unfortunately stays with me. And who knew that Sir Walter Scott sat in the *Rose and Thistle* at Alwinton nearly 200 years ago brushing up on Rob Roy? Durham birders will undoubtedly be aware that there is a herd of bison at Bishop Middleham and that Billy Elliott was filmed mainly at Easington Colliery, but I am sure that many more will be enlightened.

The guide is split into sections for the relevant counties and, by using the end-paper maps, numbered sites can be found easily without having to refer to the index. Each site is covered in the same way with a useful key-points section providing a quick guide, a comprehensive map and a guide to what birds may be expected. Disabled access, where possible, is covered in detail. The bird summaries for each area are split into target species, with percentage likelihood of finding, and other possible birds. These percentages, although largely accurate, will hopefully not lead people into thinking that they will definitely find a Temminck's Stint *Calidris temminckii* in the Druridge Bay area with only three or four visits in prime conditions (marked as 30%). In addition, I do feel that the space utilised by the list of common birds would have been better utilised to include more sites. I expect that Malcolm Hutcheson, who has spent many years surveying the Berwick area, will be miffed to see that the whole section of coast from Holy Island northwards has been omitted. Likewise, it is perfectly possible to find many rare migrants in the section of coast between Craster and Amble. Perhaps Brian was trying to keep some of Northumberland's secrets in place!

However, this site guide admirably does what it says on the tin, as the best birdwatching sites are covered in detail with a nostalgic note of past major rarities and a highly readable summary for each area. It will inevitably be compared with the revised *Where to Watch Birds in Northeast England* by Dave Britton and John Day, published in 2004. Although both publications are well worth purchasing, I do feel that Brian's guide is the easier to use, and includes better maps and directions. It is also completely up to date with references covering recent publications even into 2012. Ian Kerr has helpfully added an end section that details the status of all species recorded in the area, which is an extremely useful guide for birders visiting the area and a source of reference to county birders in the region.

To summarise, I would heartily recommend purchasing this guide and I can see it sitting in many a birder's glove compartment as a reference source ready for the next mega that turns up at a little-known site!

Tim Dean



The Black Grouse

By Patrick Laurie
Merlin Unwin Books, 2012
Hbk, 223pp; colour and black-and-white illustrations
ISBN 978-1-906122-43-0 Subbuteo code M21435
£20.00 *BB* Bookshop price £18.00

With its chequered history in Britain and elaborate lekking displays, the Black Grouse *Tetrao tetrix* is one of our most fascinating species. It is also one of our most vulnerable birds having suffered a prolonged decline and loss of range. Conservation efforts to date have, sadly, had only limited success and a recent run of severe winters has exacerbated the problems it faces, particularly for the fragmented population in the uplands of northern England. Its current scarcity makes it easy to forget that the Black Grouse was once widespread across much of the lowlands as well as in the upland landscapes where it remains today. I was fascinated to be reminded that it was once considered to be a significant pest in new plantations and was controlled by foresters to keep the numbers down. It would once have been a far more familiar bird for birdwatchers and hunters alike. While both groups will find much of interest in this excellent book, it appears to be aimed primarily at those with an interest in shooting.

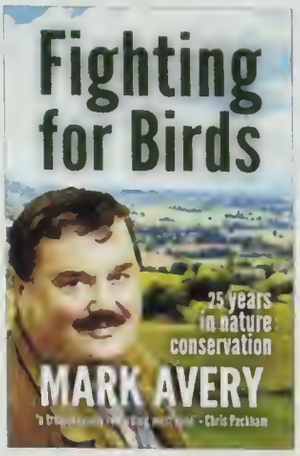
The author is clearly an expert on the history of game shooting in Britain. He was spurred on to research this species in particular by thoughts of trying to encourage its return as a potential quarry species to his family farm in Dumfries & Galloway. Much of the book is taken up by discussions about the extent to which the Black Grouse was exploited by hunters in the past. For a time its spectacular plumage and rapid escape flights made it highly sought-after as a quarry species. However, a sustained decline in numbers as well as changes in sporting attitudes meant that it increasingly lost out to its smaller cousin. Rather than walking over expanses of open moorland to stalk birds, hunters increasingly preferred the less demanding option of waiting in a fixed position while groups of birds were driven towards them. Red Grouse *Lagopus lagopus* are ideally suited to this whereas Black Grouse are apparently fickle, unpredictable and difficult to drive. On some estates they even came to be seen as a nuisance for their habit of joining up with groups of Red Grouse and encouraging them to fly strongly away from the guns.

The book is perhaps less authoritative, though no less interesting, when it comes to discussion of conservation aspects. The views are largely personal opinion rather than backed up by other sources, though they are convincing and well argued in the main. Detrimental changes to the landscape through increasingly intensive farming methods are covered in some detail. And I was intrigued by the suggestion that competition with reared and released Common Pheasants *Phasianus colchicus* might have been a contributory factor in the decline. Pheasants are a similar size to Black Grouse and there is likely to be a high degree of overlap in the diet so it is perhaps entirely plausible that there was some competition in areas where Pheasants were released in large numbers.

The author has some interesting views about how best to restore Black Grouse populations. As well as work to improve habitat quality, he suggests that reintroductions of captive-bred birds may have a role to play, while accepting that efforts so far have been very disappointing. He has very strong views about the role played by predation and believes that increasing populations of birds of prey have not helped the Black Grouse. Again, he provides little in the way of supporting evidence though he admits to finding birds of prey 'rather cold and sinister' and notes that 'we sometimes forget that when a Peregrine Falcon *Falco peregrinus* performs a spectacular stoop and kills a bird, something dies.' As he is a strong advocate for country sports, I wasn't sure exactly what point he was trying to get across here.

The author's own sketches and evocative colour illustrations are used throughout the book. While this is very far from the last word on this enigmatic species, it is a well-written and thought-provoking book. It is particularly recommended for those with an interest in shooting or in the sometimes complicated politics behind the conservation of a bird held in high esteem by both birdwatchers and hunters.

Ian Carter



Fighting For Birds: 25 years in nature conservation

By Mark Avery
Pelagic Publishing, 2012
Pbk, 336pp
ISBN 978-1-907807-29-9 Subbuteo code M21332
£12.99 *BB* Bookshop price £11.69

Quite early in chapter one, reading about Mark Avery's time as a deer researcher on Rum, I came across the bizarre statement that 'our base... looked across Mull to Skye and the Cuillins...' and wondered whether this boded well for the rest of the book. I need not have worried; it must have been an editorial mistake. This is a marvellous account of one man's work for bird conservation, reflecting Mark's impressive birding and academic background as well as his sharp intellect, his sure grasp of strategy and his huge commitment to his vocation. His well-known sense of humour is there too, as is that enviable facility at communication which made him such a great asset to the RSPB.

You won't find much inaccuracy here, but you may find things that you disagree with, or that at least make you think hard. That is entirely intentional; the book frequently takes us down all manner of tortuous paths, involves us in contentious issues, challenges us with bold statements and even makes us wonder about our own morals. It gets complicated – forgive me for using the famous reviewer's get-out 'you must read it for yourself', but really you must.

After a hugely enjoyable look at Mark's early days as a birder and researcher, we finally find him at his first RSPB job, in the Flow Country of Caithness and Sutherland, and quickly detect that the conservation bug is biting hard. Soon we are deep into a chapter asking: 'Is it ever right to be nasty to birds?' There is discussion of Ruddy Duck *Oxyura jamaicensis* control, among other things, and then of predator control – with a nice sideswipe I particularly enjoyed at the 'prejudiced drivel' RSPB staff often have to put up with from field sports people at events like the Game Fair.

Against the background of the RSPB's neutral stance on the ethics of shooting, Mark suggests that he can just about understand wildfowling, but is a bit more dubious when it comes to Common Pheasants *Phasianus colchicus* and is decidedly uneasy about grouse-shooting. This subject comes up again later in a hard-hitting chapter simply called 'The Raptor Haters'. Some of this is about the widespread (and largely ill-informed) dislike of all birds of prey and some about the disgraceful persecution which still goes on, especially on grouse moors. I could see Mark getting angrier and angrier as he wrote, so it was no surprise to find him saying that, if it were up to him, driven grouse-shooting would be banned altogether.

We move on to a chapter on 'special places' where the RSPB has been involved in battles to save them – for example the North Kent Marshes and part of Lewis, threatened, respectively, by an airfield and a huge windfarm. After a highly informative chapter on farming and farmland birds, we look at reintroductions and then at nature reserves. Next comes another strong chapter, this time on climate change and its possibly sinister implications for birds – and, indeed, the whole planet – and here I have a major criticism. It would have been helpful to have some attempt to counter the much-publicised views of the doubters and deniers, whose assertions not only hugely confuse the issue but are influential and seem to meet with a good deal of public support.

Two chapters follow which address the political dimensions of the conservation battle and then advocacy issues, all heavy stuff but very well explained. Then, curiously perhaps, comes a little light relief as we are given a long series of 'snippets', often humorous and ranging across a whole range of subjects, from seeing Little Auks *Alle alle* from the office window, to watching 400 Red Kites *Milvus milvus* at a Spanish roost, to meeting Gordon Brown and Lee Evans (not together) and Keith Brockie saving the author's life.

The final chapters make no bones about the huge amount that remains to be done in bird and wildlife conservation and about the enormous difficulties involved. The challenge is for all of us to get stuck in and do as much as we can, and, especially, to persuade the rest of the population to do the same. Seeing the RSPB as a continuing prime mover, Mark wonders about its future direction, including, amongst other things, the possible ramifications of devolution. A 'Who's who' of

statutory bodies and NGOs involved in all aspects of wildlife conservation is largely about telling us who to join, lobby, pester and influence in every way that we can. What we should do as individuals is here too.

All in all, this is a hugely important book, and so much more than just a valuable history of a hectic 25 years. It is controversial in parts, it is thought-provoking in others, and it should be used to make a lot of people sit up and take notice. I also hope that the publishers can somehow sell thousands and thousands of copies.

Mike Everett

The Mating Lives of Birds

By James Parry
New Holland, 2012
Hbk, 160pp; 140 colour photos
ISBN 978-1-84773-937-7 Subbuteo code M21313
£19.99 *BB* Bookshop price £17.99

Given the scope of this book, the title is perhaps a bit misleading – after all, mating usually takes a few seconds, and this lavishly illustrated work covers everything from the establishment of a territory right through to the young becoming independent. In a very readable style, James Parry has identified all of the key stages and grouped them chronologically. Within each group he writes essays of around two or three pages to explain different aspects of the ways birds behave, and he answers all of the key questions. For example, what is a territory, and what does it need to contain to be of any use? How are territories defended and maintained? What use is song in this process? How do birds use their plumage and other physical features to attract a mate? These are all questions that most of us will have asked ourselves at some point. The essays are neither heavy nor light, but find a middle ground where information is provided in an engaging style.

Other major sections look at display, personal relationships, nests, eggs and young. It is hard to think of an aspect of breeding that has not been covered – including the murkier side of breeding, with unmated male Ospreys *Pandion haliaetus* mating with paired females when the territorial male is away, and Barn Swallows *Hirundo rustica* killing the young from a nest where the original male has disappeared, before taking up with the female and building another nest. There are plenty of useful examples of activity such as role reversal in breeding, monogamy, polygamy and polyandry and also speculative nest-building.

The book is liberally illustrated with great photos to back up the situations being explained, and many of these are full-page images and double-page spreads. This is an excellent book for someone who wants to understand the processes of breeding, and is looking for an approachable text that explains the facts without becoming too engrossed in detail.

Keith Betton

Peregrine Falcon

By Patrick Stirling-Aird
New Holland Publishers, 2012
Hardback, 128pp
ISBN 978-1-84773-769-4 Subbuteo code M21285
£14.99 *BB* Bookshop price £13.49

When I was a boy, seeing a Peregrine Falcon *Falco peregrinus* always seemed more difficult than it described in the books! In those days they were still pretty rare, slowly recovering from the effects of DDT, and invariably miles away on a muddy estuary. Today, they are hard to miss, and it is a delight to see them breeding in our towns and cities.

Few books have been published on Peregrines in recent years, so this volume by Patrick Stirling-Aird, secretary of the Scottish Raptor Groups, is most welcome. It is an informative and relaxing read, and has numerous stunning colour images,

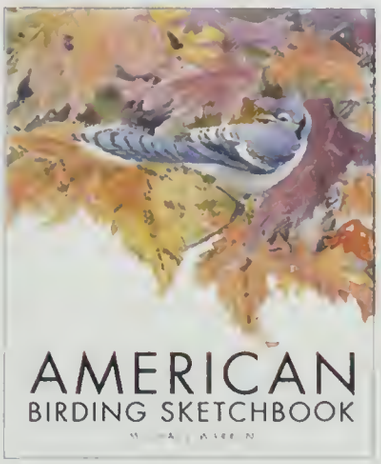
from the intimate scene of a pair mating to a parent delicately feeding its chicks. I particularly like one showing three chicks on a ledge; it seems that you are peering into their lives.

In the introduction, fascinating topics such as taxonomy and evolution are discussed in simple terms, making it easy for those delving into this subject for the first time to understand something of these complex topics. Now I know how the Peregrine came to be! Nine chapters discuss a range of subjects ranging from distribution to interactions between Peregrines and other species. I was surprised to discover that this falcon often nests in association with Canada Geese *Branta canadensis*, which warn of approaching predators. The relationship between humans and Peregrines, from falconry to persecution, is explored, and past and present threats are discussed. The book also covers those who have written about and celebrated the Peregrine, and includes the poem by Sir Walter Scott published in 1810.

A large proportion of the book is devoted to the Peregrine's breeding cycle – the period in which Peregrines are most active, and also that which enthusiasts and ornithologists most enjoy studying as it shows the more intimate side of this falcon's life. The book wouldn't be complete without a review of this renowned predator's varied diet, and the aptly named 'Homes and Meals' chapter discusses much of their recorded prey and hunting behaviour, including reference to my own work discussing their night-hunting habits (*Brit. Birds* 101: 58–67). The final chapter explains how to see Peregrines and what behaviours to look and listen for at different times of the year.

The final image, on the index page of the book, is a brilliant montage showing a juvenile Peregrine dropping through the sky in a stoop dive. It sums up the species well, and shows just why we may want to discover more about the fastest bird in the world.

Ed Drewitt



American Birding Sketchbook

By Michael Warren
Langford Press, 2012
Hbk, 144pp; full colour throughout
ISBN 978-1-904078-47-0 M21402
£38.00 *BB* Bookshop price £34.00

Maybe it is just me, but sometimes when I pick up a book, I just know that I am going to enjoy it. I appreciate that it is partly clever design and marketing of the dust jacket by the publisher, and the cover image of a Blue Jay *Cyanocitta cristata* is certainly a stunner. Nevertheless, the feeling was there telling me that this is my kind of book, and within lay the joys of handling something real, with pages and its own smell, as opposed to a piece of plastic with words on it. Put simply, *American Birding Sketchbook* is an avian celebration, and turning every page revealed a spread bursting with colour and vibrancy. My instincts were confirmed – this is a happy book!

The premise of the book evolved from sketches and notes amassed by Mike Warren during the 1980s and 1990s, when various projects involved visits to all 50 states in the USA! For years the notebooks lay largely dormant, but not forgotten. It is apparent that the author had been itching to work on this task and when the opportunity arose he pulled out all the stops. The majority of the states are given a double-page spread, packed to the rafters with birds, foliage and scenery, providing a sense of place and atmosphere. Where there has been more to describe, a few birds have flitted over onto extra pages. With a cast of thousands, it is difficult to pick out any one favourite and with each reread new birds seem to have arrived on the pages, but I now know that I *really* want to see the Acorn Woodpecker *Melanerpes formicivorus*.

I freely admit that I admire Mike's work and I love painting American birds. So I shouldn't be surprised at my own reaction to this book. But in my view, it shows some of his most relaxed work to date; he obviously took delight in the process of putting this folio together. It might be a cliché, but if you relish top-quality wildlife art, this large-format tome will make the perfect Christmas indulgence. It will definitely be joining the others on my shelf marked 'comfort reading'.

Dan Powell

Burridge's Multilingual Dictionary of Birds of the World Volume II – English

Edited by John T. Burridge • Cambridge Scholars Publishing, 2008 • Hbk, 253pp
ISBN 978-1-84718-517-4 Subbuteo code M21408 • £39.99 *BB* Bookshop price £35.99

This is one of a set of books for which the eventual aim is to provide a comprehensive dictionary, in about 50 languages, of the vernacular names of the c. 10,000 species of bird in the world. With minimal introduction, the bulk of this volume is a long list of bird names. Each species gets a unique reference number, followed by its English name, taken primarily from the *Howard and Moore Complete Checklist of the Birds of the World* (Dickinson 2003), with names from other mainstream sources such as *The Clements Checklist of the Birds of the World* (Clements 2007) listed when these differ significantly. A quick search finds 19 volumes currently available: Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Hungarian, Italian, Japanese, Latin (*sic*, presumably scientific), Norwegian, Polish, Portuguese, Russian, Spanish and Swedish. Each gives the vernacular names of every species in that language, indexed by their unique numbers for referencing across volumes. At £40.00 a time, these books are massively overpriced, though presumably only libraries are going to consider purchasing the full set – most individual ornithologists can restrict themselves to 'Latin' and the languages of interest to them. That is, if they need the books at all; much of the information is available on the web and a glance at samples of the non-English volumes betrays a heavy reliance on the freely available Bird Studies Canada 'Avibase' (http://avibase.bsc-eoc.org). Publishing in book form prevents flexible updating of taxonomy, inclusion of many alternative vernacular synonyms, or any reaction to the publication of the IOC World Bird Names (Gill & Wright: www.worldbirdnames.org). Frankly, this type of list is what the internet was made for, but some ornithologists might find the books to be a useful reference.

Martin Collinson

Butterflies of Britain & Ireland

Narrated by Nick Baker and others • BirdGuides, 2012 • 2 DVDs (3+ hours in total)
Subbuteo code V60073 • £30.00 *BB* Bookshop price £27.00

This double DVD set introduces viewers to each of the 59 British and Irish butterflies. After loading, which is quick and simple, viewers are presented with a pictorial menu that leads to each family or group of related species. Navigation through the menus is straightforward to reach the individual species accounts. Each species is introduced by Nick Baker, who provides a clear and concise commentary. Interviews with experts, including Richard Lewington, Richard Fox and Jeremy Thomas, provide an insight into the more fascinating aspects of the life-cycle of some species.

Species accounts typically last 2–4 minutes, although the commentary on the Wood White complex lasts for over five minutes, but this deals with Wood White *Leptidea sinapis*, Réal's Wood White *L. reali* and the newly discovered but as yet undescribed Cryptic Wood White, amalgamated into a single account. Details of habitat, behaviour, comparison with similar species including side-by-side images, anecdotal background information, extinctions and threats, and the egg, caterpillar and pupae stages are documented in amazing detail. Some of the more complex survival adaptations are discussed at length. Close-up images include feeding, and courtship and mating, while more distant sequences feature butterflies in their typical habitats – for example, Purple Emperor *Apatura iris* and Purple Hairstreak *Quercusia quercus* in the upper canopy, and Mountain Ringlet *Erebia epiphron* flitting low over its moorland home – each providing a feel for the distinctive flight of the species which enables their rapid identification, essential when surveying over large areas. A 10-km-square distribution map is provided for each species and it is here that most of the range changes and extinctions are discussed.

A short section deals with ten former breeders and vagrants, and another covers five of the many diurnal moths that are sometimes mistaken for butterflies. The brevity of these sections is at odds with the more detailed species accounts.

There is much here for those taking their first foray into the world of butterflies, and for experienced butterfly enthusiasts too.

Peter Kennerley

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Spoon-billed Sandpipers reared and released in Russia

The Spoon-billed Sandpiper Task Force has had another successful season in Chukotka in their attempts to save the Critically Endangered Spoon-billed Sandpiper *Eurynorhynchus pygmeus*. Twenty eggs were flown back to the UK from Siberia to boost the conservation breeding programme. Nine more were successfully hatched and reared in the nearest tundra village, Meinypil'gyno, before being released as fledglings to make their 8,000-km migration to Myanmar. This new technique, 'headstarting', was trialled for the first time in 2012.

The success of the trial paves the way for eggs laid in the UK, as part of the conservation breeding programme, to be flown to Russia, hatched and the young birds released into the wild. 'Headstarting' protects the young birds from predators and bad weather. In the wild, just three birds out of every 20 eggs laid survive long enough to migrate away from the breeding grounds. This summer the headstarting trial reared and released nine Spoon-billed Sandpipers from 11 eggs.

WWT aviculturist Roland Digby worked with Juriy Bragin of Moscow Zoo and Liza Tambovtseva of Birds Russia to oversee the project and perfect the techniques. He said: 'Predation by skuas, foxes, dogs and even bears has a massive effect on the birds, but it is small beer compared with the effect of land reclamation along the coast of the Yellow Sea, which has wrecked the main place they stop to feed on their long migration. The other major threat they face is in Myanmar and Bangladesh but, thankfully, initial reports indicate that measures to discourage hunters there from targeting shorebirds like Spoon-billed Sandpipers seem to be working.

'As headstarting boosts the number of birds migrating south to Myanmar over the next few years, just as those conservation measures start to take effect, it is hoped it will speed up the birds' recovery.'

The loss of habitat in the Yellow Sea is a much more challenging problem. As the economies around its coastline develop rapidly, great tracts of mudflat have been encircled by seawalls and converted for industry, agriculture and recreation. In September, WWT, RSPB and others fighting for the survival of the Spoon-billed Sandpiper attended the IUCN World Conservation Congress in South Korea – one of the worst-offending countries for reclaiming mudflats around the Yellow Sea – to lobby for better use of habitats along that coastline.

The two populations of Spoon-billed Sandpiper reared at Slimbridge now number 12 survivors from the class of 2011 and 17 juveniles from the 20 eggs collected this year. Since the species doesn't breed until its second year, the first breeding attempts at Slimbridge are expected in 2013. And the project team hopes to return to Siberia next year to collect more eggs and 'headstart' more juvenile birds reared locally. The expedition cost will be a further £150,000. Donations can be made online at www.wwt.org.uk/sbs

Spent lead gunshot continues to harm and kill British birds

Post-mortem results of thousands of UK waterbirds have revealed that poisoning from spent lead shot is still a major cause of death more than ten years after legislation was introduced to reduce the threat. The analysis was published in early October, alongside the results of tests on blood samples taken from live waterbirds caught in Britain within the last two years, which show that more than one in three of the birds sampled were affected by lead poisoning.

Lead is toxic and most uses of lead have systematically been phased out over the last three decades. However, lead remains the most common material for shot in the UK. Waterbirds eat spent lead shot when feeding and taking in grit to help grind food in their gizzards. As the lead is absorbed into their bodies, it affects virtually every system. For example, it paralyses stomach muscles, causing food to become packed into the intestine, and birds can die of starvation.

Some restrictions on shooting with lead shot have gradually been introduced across the UK but they do not cover most shooting over agricultural land, where many swan and goose species graze. Studies have also shown that in England there is little compliance with the current laws, with many shooters freely admitting that they use lead illegally.

Martin Spray, Chief Executive of WWT, which funded and carried out the research, said: 'WWT has studied the effects of lead shot on ducks, geese and swans for decades, stretching back to Sir Peter

Paul Hobson/FLPA

395. Many waterbirds, such as Whooper Swans *Cygnus cygnus*, graze on agricultural land where it is still legal to shoot most species with lead shot. A single shotgun cartridge contains up to 300 pieces of lead shot, almost all of which fall to the ground after being fired.

Scott's days. It is as clear today as it was then that in the UK lead poisoning from shooting kills a large number of our wild birds each year and makes many more very sick.

'Despite the law, brought in over a decade ago to protect wetland birds, nothing has changed. Clearly an effective solution is long overdue.'

Chris Perrins, LVO, FRS, Emeritus Fellow of the Edward Grey Institute at Oxford University, has been the Queen's Warden of the Swans since 1993. His research into lead poisoning of Mute Swans *Cygnus olor* built the case for the restrictions on the sale of lead angling weights. He said: 'I find it extraordinary that we are still using lead [for shooting]. The Royal Commission on Environmental Pollution dealt with lead in 1983. One of its recommendations was [to phase out] all lead shooting shot and all lead fishing weights. Yet here we are nearly 30 years on and we are still using them.'

Mixed fortunes for wintering waterbirds

The latest figures collected by Wetland Bird Survey (WeBS) volunteers illustrate the importance of the UK's wetlands for wintering waterbirds – particularly so during harsh winters such as 2010/11, the coldest across the UK for 35 years. During such winters, these sites often act as a refuge for birds forced out of frozen continental Europe.

The severe conditions experienced in the 2010/11 winter, described in the latest *Waterbirds in the UK* report, had strong effects on a number of migratory waterbirds. Birds such as the European White-fronted Goose *Anser a. albifrons*, Eurasian Teal *Anas crecca*, Mallard *A. platyrhynchos* and Northern Lapwing *Vanellus vanellus* arrived in the UK en masse from deeply frozen parts of Europe. This was in contrast to previous winters during which these and other species had appeared in lesser numbers in the UK, at least partly due to milder conditions. However, despite the weather, numbers of others such as Common Pochard *Aythya ferina* and Ringed Plover *Charadrius hiaticula* fell further in 2010/11, to their lowest-ever levels. This is a strong indication that those species may be suffering from wider problems across Europe – there is a need for research and international collaboration to understand the problems being faced.

The UK's two largest inland wetlands, the Somerset Levels and the Ouse Washes, attracted especially large numbers of birds in the 2010/11 winter. At the Somerset Levels, over 50,000 Wigeon *Anas penelope* and 70,000 Lapwings were both exceptional peaks – tangible evidence of the importance of these sites as cold-weather refuges,

and the benefits of wetland habitat management.

Some waterbirds continue to flourish in the UK – winter populations of Gadwall *A. strepera*, Avocet *Recurvirostra avosetta* and Black-tailed Godwit *Limosa limosa* have never been higher. But among the 60 waterbird species wintering in the UK for which population trends are produced, eight native species have declined by more than a quarter in the last 25 years: European White-fronted Goose -79%, Purple Sandpiper *Calidris maritima* -52%, Common Pochard -50%, Mallard -39%, Bewick's Swan *Cygnus columbianus* -32%, Common Goldeneye *Bucephala clangula* -28%, Dunlin *Calidris alpina* -28% and Ringed Plover -25%.

Chas Holt, WeBS Organiser at the BTO, said: 'Over 3,000 WeBS volunteers braved the freezing winter of 2010/11 to count the UK's internationally important waterbird populations. We are indebted to their efforts. Against a recent history of population changes during milder winters, this fantastic effort is fundamental in helping to understand the response to periods of unexpectedly cold weather.'

Golden opportunity to crack bird of prey persecution

As the Hen Harrier *Circus cyaneus* teeters on the brink of extinction as a breeding bird in England, Coalition and Welsh Government Ministers have a once-in-a-lifetime opportunity to tackle the illegal killing of birds of prey in England and Wales, and must not waste it. That's the message from the RSPB as it publishes its annual Birdcrime report, which shows yet another shameful year of poisoning, shooting and trapping of Red Kites *Milvus milvus*, Golden Eagles *Aquila chrysaetos*, Peregrine Falcons *Falco peregrinus*, Northern Goshawks *Accipiter gentilis* and other persecuted species. Just one pair of Hen Harriers bred in England in 2012, and the Government's own studies suggest that illegal killing is the major factor in their decline.

Too little has been done over the years to stop these sickening attacks on birds, but this could change with proposed reforms of wildlife law and policing. The RSPB believes that a review of wildlife protection legislation by the Law Commission – currently being consulted on – provides a golden opportunity to address ongoing persecution of birds of prey in England and Wales.

The publication of the House of Commons Environmental Audit Committee's inquiry into wildlife crime was also scheduled for October (not available at the time of writing) while the imminent reorganisation of the police service and the creation of the National Crime Agency will provide further opportunities to prioritise wildlife crime.

RSPB Conservation Director Martin Harper said: 'I hope that tougher laws and penalties for wildlife offenders will help to consign their crimes to the pages of history where they belong. We need Defra and Home Office Ministers, and the Welsh Government to step up for nature and make the right decisions. An essential first step is to secure the future of the National Wildlife Crime Unit, which has guaranteed funding only until March next year.

'It's been over 100 years since poisoning of wild birds was outlawed in the UK and yet our report shows we're still witnessing the slaughter of kites, eagles and buzzards. Fewer incidents were recorded last year but, as our report highlights, birds of prey continue to die at the hands of those who want to remove them from our countryside. Thankfully, vastly more people are inspired by the homecoming of eagles, Ospreys [*Pandion haliaetus*] and Peregrines and recognise that these charismatic species bring huge enjoyment to people and benefits for tourist economies.'

New RSPB chairman

Prof. Steve Ormerod, often described as one of the foremost freshwater ecologists of his generation, was elected as Ian Darling's successor as chairman of the RSPB at the society's AGM in October. Steve is Professor of Ecology in Cardiff University's School of Biosciences and has published over 250 scientific papers on freshwater ecosystems, including river birds such as the Common Kingfisher *Alcedo atthis*, Dipper *Cinclus cinclus* and Grey Wagtail *Motacilla cinerea*.

Commenting on the task ahead of him, Prof. Ormerod said: 'This is a hugely challenging time to be invited to chair RSPB Council: the global need to conserve nature for its own intrinsic value and for the countless benefits it brings to our lives has never been more acute. But the movement of RSPB and its many partners will rise to this challenge by reconnecting people with the natural world, by demonstrating what is achievable and by making the strongest political case for conservation. I'm very flattered to be asked to take on this role at such a pivotal moment.'

New secretary for the East African Rarities Committee

The East African Rarities Committee (EARC) has a new secretary, Kenyan resident Nigel Hunter. The committee covers Kenya, Tanzania and Uganda and collects details of up to the fifth record of all rare species for each country. Photographs of rarities seen are especially useful, but if not available a full written description is required. Past records of such rare species are also sought. The EARC prefers to receive records in electronic form via e-mail to nigelhunter@timbale.org

Artwork in *BB*

Just a reminder that much of the artwork that appears in *BB* is for sale. Contact us at editor@britishbirds.co.uk if you're interested in purchasing any, and we'll put you in touch with the artist concerned.

New County Recorder

Warwickshire: Steven Haynes, 4 Spinney Close, Arley, Coventry CV7 8PD; tel. 01676 542612; e-mail steve.haynes@yahoo.co.uk

Taxonomic revisions to the British List

The October issue of *Ibis* contains the latest recommendations by the Taxonomic Sub-committee (TSC) of the BOU Records Committee. In brief, key findings of the report include:

Cory's Shearwater *Calonectris diomedea* to be treated as three species:

- Cory's Shearwater *C. borealis* (Category A) • Scopoli's Shearwater *C. diomedea* (Category A) • Cape Verde Shearwater *C. edwardsii* (extralimital)

Madeiran Storm-petrel *Oceanodroma castro* to be treated as three species in the Western Palearctic:

- Cape Verde Storm-petrel *O. jabejabe* • Madeiran Storm-petrel *O. castro* • Monteiro's Storm-petrel *O. monteiroi* (The status of these species on the British List is subject to re-assessment of the two British records.)

Cream-coloured Courser *Cursorius cursor* to be treated as two species:

- Cream-coloured Courser *C. cursor* (Category A) • Somali Courser *C. somalensis* (extralimital)

Arctic Warbler *Phylloscopus borealis* to be treated as three species:

- Arctic Warbler *P. borealis* (Category A) • Kamchatka Leaf Warbler *P. examinandus* (extralimital) • Japanese Leaf Warbler *P. xanthodryas* (extralimital)

Marmora's Warbler *Sylvia sarda* to be treated as two species:

- Balearic Warbler *S. balearica* • Marmora's Warbler *S. sarda* (The status of these species on the British List is subject to reassessment of the British records.)

Eurasian Nuthatch *Sitta europaea* to be treated as two species:

- Siberian Nuthatch *S. arctica* (extralimital) • Eurasian Nuthatch *S. europaea* (Category A)

Generic changes for three familiar waders: Ruff *Calidris pugnax*; Broad-billed Sandpiper *Calidris falcinellus* and Buff-breasted Sandpiper *Calidris subruficollis*

Reference

Sangster, G., Collinson, M., Crochet, P-A., Knox, A. G., Parkin, D.T., & Votier, S. C. 2012. Taxonomic recommendations for British birds: eighth report. *Ibis* 154: 874–883.

Cuckoo update

The *British Birds*-sponsored Cuckoo *Cuculus canorus* 'BB' arrived in Chad at the end of July and, after the excitement of the long migration south (see *Brit. Birds* 105: 551), there has been rather little to report since. The bird has made relatively small movements within Chad during September but, despite at one point looking as though he was about to cross the border into the Central African Republic, he remains in Chad at the time of writing.

Follow BB's progress at www.bto.org/science/migration/tracking-studies/cuckoo-tracking/scotland/BB

Recent reports

Compiled by Barry Nightingale and Harry Hussey

This summary of unchecked reports covers early August 2012 to early October 2012.

Headlines Ireland scooped the top prizes in this two-month period, with two species new to the Western Palearctic: Black Skimmer in Co. Mayo and Eastern Kingbird in Co. Galway. As well as these two, birders in Ireland had plenty more to celebrate, not least a Belted Kingfisher, a Blackpoll Warbler and a multiple arrival of Yellow-rumped Warblers (all in early October, at about the same time as the Eastern Kingbird) and the now-expected array of North American waders. In Britain, Scottish islands stole the lion's share of the rarities: Britain's second Magnolia Warbler on Fair Isle topped the bill, just ahead of Britain's third Semipalmated Plover in the Outer Hebrides, but there was another mouth-watering slew of vagrants, in Shetland in particular, in the second half of September. Other top-drawer rarities included Short-billed Dowitchers in Dorset and Scilly (the second and third records for Britain), Eleonora's Falcon in Cornwall, an American Black Tern in the northwest, no fewer than four Pallas's Grasshopper Warblers (including three on mainland Britain) and two Sykes's Warblers (Scilly and Shetland), Swainson's Thrushes in Shetland and the Outer Hebrides and Grey-cheeked Thrush on Scilly, and White's Thrushes in Orkney and Northumberland.

Ross's Goose *Anser rossii* Budle Bay (Northumberland), two, 10th September (with Pink-footed Geese *A. brachyrhynchus*). American Wigeon *Anas americana* South Uist (Outer Hebrides), 4th October; Tacumshin (Co. Wexford), 7th October. Black Duck *Anas rubripes* Achill Island (Co. Mayo), 7th September to 4th October. Garganey *Anas querquedula* Ouse Washes (Cambridgeshire), peak count of 92 on 27th August. Blue-winged Teal *Anas discors* Tacumshin, 25th–26th August; Carbarns Pool, 25th August to 8th September, same Baron's Haugh, 28th August, and Bridgend Farm Pool (all Clyde), 16th September; Lough Beg (Co. Derry), 14th September; Marshside RSPB (Lancashire & N Merseyside), 16th–19th September. Ferruginous Duck *Aythya nyroca* Long-stayers in Somerset to 19th August, then Avon to 4th October (with up to two, 30th August to 14th September) and Suffolk to 23rd August; Lincolnshire, 15th–28th September. Lesser Scaup *Aythya affinis* Cardiff Bay Wetlands (East Glamorgan), returning bird 25th August, same Chew Valley Lake (Avon), 28th August to 5th October; Vane Farm (Perth & Kinross), 15th September. King Eider *Somateria spectabilis* Burghead (Moray & Nairn), 29th September. Surf Scoter *Melanitta perspicillata* Long-stayers in Angus & Dundee to 9th August, and in North-east Scotland (with up to four to 26th August, at least one to 21st September). New arrivals in Caernarfonshire, 28th August (with up to 100,000 Common Scoters *M. nigra* along the North Wales coast); Lothian, 16th September; Argyll, 18th September; Shetland, 23rd September to 3rd October; Co. Kerry, 7th October.

Reston Kilgour

396. Juvenile Baillon's Crake *Porzana pusilla*, Rainham Marshes, Greater London, September 2012.

Black-browed Albatross *Thalassarche melanophris* Calf of Man (Isle of Man), 18th September. Fea's Petrel *Pterodroma feae* Carnsore Point (Co. Wexford), two, 18th August; Cape Clear (Co. Cork), 19th August; Porthgwarra (Cornwall), 24th August; Galley Head (Co. Cork), 29th August; Fraserburgh (North-east Scotland), 26th September; Mizen Head (Co. Cork), 5th October. Balearic Shearwater *Puffinus mauretanicus* Peak counts included: Start Point (Devon), 282 on 10th September and 82 on 2nd October; Portland Bill (Dorset), 118 on 10th September, 163 on 25th and 60 on 2nd October; Prawle Point (Devon), 207 on 26th September and 70 on 30th September; and Porthgwarra, 187 on 2nd October. Yelkouan Shearwater *Puffinus yelkouan* Whitburn (Co. Durham), 31st August. Macaronesian Shearwater *Puffinus baroli* Toe Head (Co. Cork), 19th August; Bridges of Ross (Co. Clare), 27th August; Porthgwarra, 29th August. Wilson's Storm-petrel *Oceanites oceanicus* Kilbaha (Co. Clare), two, 12th August; 5 km west of the Blaskets (Co. Kerry), 17th August; Bridges of Ross, 17th August; Toe Head 19th August; Galley

Derek Moore

397. Juvenile Baird's Sandpiper *Calidris bairdii*, West Angle Bay, Pembrokeshire, August 2012.

Gary Thoburn

398. Juvenile Short-billed Dowitcher *Limnodromus griseus*, Lodmoor, Dorset, September 2012.

Head, 21st August; Baile na hAbhainn (Co. Galway), 4th October.

Little Bittern *Ixobrychus minutus* Sevenoaks (Kent), 15th September. Night Heron *Nycticorax nycticorax* Pennington (Hampshire), long-stayer to 19th August. Cattle Egret *Bubulcus ibis* Records from Devon (two), Dorset, Gloucestershire, Highland, Kent, Outer Hebrides and Somerset. Great White Egret *Ardea alba* Records from Cambridgeshire, Carmarthenshire, Cheshire & Wirral, Cornwall, Derbyshire, Dorset, Essex, Gower, Greater London, Hampshire, Hertfordshire, Kent, Lancashire & N Merseyside, Lincolnshire, Norfolk, Nottinghamshire, Oxfordshire, Pembrokeshire, Shropshire, Somerset, Suffolk, West Midlands, Co. Wexford, Wiltshire, Worcestershire and Yorkshire. Purple Heron *Ardea purpurea* Long-stayer Cambridgeshire to 24th August, another 25th August to 5th September, with others in Cheshire & Wirral, Dorset, Highland, Kent and Norfolk. Glossy Ibis *Plegadis falcinellus* Long-stayers in Co. Cork to at least 2nd September, Tacumshin to at least 15th September (with two there on 6th) and Pembrokeshire to 6th October. Other singles Cambridgeshire and later Cheshire & Wirral, Hampshire, Lancashire & N Merseyside, Norfolk, Somerset, Suffolk, Sussex and Co. Wexford. Obvious influx into Cornwall on 6th October, with eight reported on The Lizard, seven at Marazion, seven at Sennen Cove (with three nearby on 7th) and 15 at Land's End.

Black Kite *Milvus migrans* Records from Angus & Dundee, Greater London, Kent, West Midlands and Yorkshire. 'Northern Harrier' *Circus cyaneus hudsonius* Tacumshin, 6th–7th October. Pallid Harrier *Circus macrourus* Moyasta (Co. Clare), 12th August; Firsby Resr (Yorkshire), mid September to 7th October. Red-footed Falcon *Falco vespertinus* Chichester GP (Sussex), 20th August to 11th September; Fenwick (Northumberland), 21st September. Eleonora's Falcon *Falco eleonorae* Porthgwarra, 11th August.

Baillon's Crake *Porzana pusilla* Rainham Marshes (Essex/Greater London), 7th–23rd September.

Black-winged Stilt *Himantopus himantopus* Wet Moor (Somerset), two, 9th August; Pett Level (Sussex), 15th August; Cottam (Nottinghamshire), two, 18th September. Semipalmated Plover *Charadrius semipalmatus* South Uist, 6th–11th September. Kentish Plover *Charadrius alexandrinus* Dungeness (Kent), 24th August. American Golden Plover *Pluvialis dominica* After the first in Cambridgeshire on 21st August, a widespread influx of *c.* 24 individuals, with nine arriving during 4th–9th September. Most were in the Outer Hebrides (up to eight) and Orkney (up to five). A further 24 birds were reported from Ireland during September and early October.

Semipalmated Sandpiper *Calidris pusilla* Tiree (Argyll), 2nd–7th September; Lewis (Outer Hebrides), 3rd–4th September; South Uist, 4th–6th September, another 9th and 17th September; Skye (Highland), 7th–12th September; Loch Ryan (Dumfries & Galloway), 8th–12th September; Lough Foyle (Co. Derry), 15th September; Tyninghame Bay (Lothian), 15th–20th September; Dungeness, 17th September; Ynyslas (Ceredigion), 20th–22nd September; Garretstown (Co. Cork), two, 20th September, one to 22nd September; Blennerville (Co. Kerry), 24th September; Tacumshin, 27th September. Least Sandpiper *Calidris minutilla* Carrahane (Co. Kerry), 13th August; Cape Clear, 20th August. White-rumped Sandpiper *Calidris fuscicollis* About 11, with first in Yorkshire on 10th August, and influx of six arriving in Britain during 17th–22nd September. A further 14 were reported from Ireland during the period, with records widely spread. Baird's Sandpiper

Martin Goodey

399. Juvenile Short-billed Dowitcher *Limnodromus griseus*, Tresco, Scilly, September 2012.

Steve Young/Birdwatch

400. Juvenile 'American Black Tern' *Chlidonias niger surinamensis*, Eccleston Mere, Lancashire & N Merseyside, August 2012.

Calidris bairdii Ballinrannig (Co. Kerry), 16th–17th August; West Angle Bay (Pembrokeshire), 20th–26th August; Marazion, 31st August; Seaton Carew (Cleveland), 3rd–11th September; Birsay (Orkney), 9th September; Titchwell (Norfolk), 9th–11th September and 19th–23rd September; Kilcoole (Co. Wicklow), 14th–18th September; Pennington, 14th September; Eshaness (Shetland), 16th September; Tean then Tresco (both Scilly), 16th September; Old Moor (Yorkshire), 22nd September; Farne Islands (Northumberland), 26th September; Rosscarbery (Co. Cork), 4th–8th October. Pectoral Sandpiper *Calidris melanotos* A good arrival, with multiple counts at several sites in Britain, including four at Loch of Strathbeg (North-east Scotland), on North Ronaldsay (Orkney) and at the Ouse Washes. Present at Tacumshin almost daily throughout September with a peak of seven on 8th September. Broad-billed Sandpiper *Limicola falcinellus* Seaton Carew, 21st–22nd August; Nosterfield (Yorkshire), 25th August. Buff-breasted Sandpiper *Tryngites subruficollis* Following the first in Dorset on 9th August, a widespread arrival involving c. 42 individuals, including an influx of eight during 7th–10th September and a further 15 during 16th–21st September. Most were in the Outer Hebrides (eight), Shetland (five), Cornwall (four) and Scilly (four). A further 29 or more were reported from Ireland from 12th August, mostly singles but four at Carrahane (Co. Kerry) on 14th–16th September, five at Myroe Levels (Co. Derry) on 29th September and three at Bridges of Ross (Co. Clare) on 3rd October. Short-billed Dowitcher *Limnodromus griseus* Lodmoor (Dorset), 3rd September to 6th October; Tresco, 9th–21st September. Long-billed Dowitcher *Limnodromus scolopaceus* Slimbridge, long-stayer to 29th

Dermot Breen

Dermot Breen

401 & 402. Eastern Kingbird *Tyrannus tyrannus*, Inishmore, Co. Galway, October 2012.

September, and again 3rd–4th October, same Walmore Common (both Gloucestershire), 1st October; Drumburgh Marsh (Cumbria), 27th September; Holy Island, 28th September, Hauxley 30th September and Cresswell Pond (all Northumberland), 30th September to 1st October; Burton Mere (Cheshire & Wirral), 1st October; North Uist (Outer Hebrides), 4th–6th October; Alkborough Flats (Lincolnshire), 5th–6th October; Lough Beg (Co. Cork), 7th October. Upland Sandpiper *Bartramia longicauda* Lissagriffin (Co. Cork), 7th October. Spotted Sandpiper *Actitis macularius* Ballinrannig, Smerwick Harbour (Co. Kerry), 4th–16th September; South Uist, 6th–19th September; Voe (Shetland), 30th September to 2nd October. Greater Yellowlegs *Tringa melanoleuca* Loch of Strathbeg, long-stayer again 26th–28th September. Lesser Yellowlegs *Tringa flavipes* Flamborough Head (Yorkshire), 1st September; Kingsmill Lake (Cornwall), 2nd–28th September; Curry Moor (Somerset), 29th–30th September; Isle of Bute (Argyll), 2nd–3rd October; North Bull (Co. Dublin), 7th–8th October. Wilson's Phalarope *Phalaropus tricolor* Rosscarbery, 24th–25th August; Kinsale Marsh (Co. Cork), 2nd–9th September. Red-necked Phalarope *Phalaropus lobatus* Records from Dumfries & Galloway, Gloucestershire, Leicestershire & Rutland, Lincolnshire, Norfolk, Sussex and Yorkshire.

Franklin's Gull *Larus pipixcan* Gormanstown (Co. Meath), 16th August. Little Gull *Hydrocoloeus minutus* Impressive gatherings off the Yorkshire coast included 5,500 at Hornsea on 12th August and 2,460 on 6th September; 2,400 at Spurn on 29th September and 5,000 on 7th October; and 1,011 at Flamborough on 1st October. Bonaparte's Gull *Chroicocephalus philadelphia* Add Estuary (Argyll), long-stayer to 12th August; Whitburn/ Sunderland (Co. Durham), intermittently from 16th August to 9th September; Larne (Co. Antrim), 14th September to 2nd October; Unst (Shetland), 30th September. Gull-billed Tern *Gelochelidon nilotica* Tophill Low (Yorkshire), 25th August; Flamborough Head, 18th September. 'American Black Tern' *Chlidonias niger surinamensis* Eccleston Mere and Prescot Resr (both Lancashire & N Merseyside), 30th August to 4th September, also Pennington Flash (Greater Manchester), 1st September. White-winged Black Tern *Chlidonias leucopterus* Langstone Harbour (Hampshire), two, 24th August. Forster's Tern *Sterna forsteri* Long-stayer Soldier's Point (Co. Louth), 29th August to 4th October. Black Skimmer *Rynchops niger* Belmullet (Co. Mayo), 30th August.

Snowy Owl *Bubo scandiacus* Arranmore (Co. Donegal), long-stayer to 10th September; St Kilda (Outer Hebrides), 10th September. Alpine Swift *Apus melba* Newquay (Cornwall), 17th–18th August; Edinburgh (Lothian), 17th–18th August; Brandon Head (Co. Kerry), 21st August. Belted Kingfisher *Megaceryle alcyon* Lough Fee/Kylemore (Co. Galway), 5th–6th October.

Eastern Kingbird *Tyrannus tyrannus* Inishmore (Co. Galway), 5th October. Red-eyed Vireo *Vireo olivaceus* Unst, 12th–15th September.

Isabelline Shrike *Lanius isabellinus* Toab/Virkie (Shetland), 27th September to 5th October. Lesser Grey Shrike *Lanius minor* St Mary's (Scilly), 22nd August; Fetlar (Shetland), 14th September. Woodchat Shrike *Lanius senator* Wyke Regis (Dorset), 18th August to 1st September; Tresco, 20th August.

Short-toed Lark *Calandrella brachydactyla* Lundy (Devon), 12th September; Tacumshin, 29th September. Red-rumped Swallow *Cecropis daurica* Frodsham Marsh (Cheshire & Wirral), 29th August; Conwy (Denbighshire), 3rd September; Marazion, at least seven, 5th–6th October, one 7th

George Petrie

403. Red-eyed Vireo *Vireo olivaceus*, Unst, Shetland, September 2012.

Rebecca Nason

404. Lanceolated Warbler *Locustella lanceolata*, Fair Isle, October 2012.

October, and Land's End (both Cornwall), two, 6th October; St Agnes (Scilly), 6th October; Tregunna (Cornwall), 7th October; Plymouth (Devon), 7th October; Seaford Head (Sussex), 7th October.

Greenish Warbler *Phylloscopus trochiloides* After the first in Orkney on 14th August, about another 14 arrived, with seven during 26th–29th August and five during 23rd–29th September. Most were along east-facing coasts, including three each in Northumberland and Yorkshire, but singles reached Denbighshire and Pembrokeshire. Arctic Warbler *Phylloscopus borealis* Fair Isle, 19th–21st August, 29th August to 5th September, 21st–23rd and 27th September to 2nd October; Unst, 1st–2nd September; Flamborough Head, 1st–2nd September; Holy Island, 26th–29th September; St Mary's, 27th September. Yellow-browed Warbler *Phylloscopus inornatus* Following one at Holme (Norfolk), 21st September, a widespread influx of about 150 on 22nd September, and c. 400 reported by the end of September including one inland at Rainham Marshes. Concentrations included 24 on Foula (Shetland) on 22nd, 28 on Fair Isle on 24th and 11 on North Ronaldsay on 24th September. Western Bonelli's Warbler *Phylloscopus bonelli* Bryher, 27th August, St Mary's, 20th–21st September, St Martin's (all Scilly), 1st–6th October. Pallas's Grasshopper Warbler *Locustella certhiola* Hartlepool (Cleveland), 26th September; Whitburn, 26th September; Collieston (North-east Scotland), 26th–27th September; Fair Isle, 3rd October. Lanceolated Warbler *Locustella lanceolata* Out Skerries (Shetland), 21st September; Fair Isle, 23rd September, and up to two between 26th September and 7th October; Whalsay (Shetland), 25th September; North Ronaldsay, 26th September; Melby (Shetland), 27th–29th September. River Warbler *Locustella fluviatilis* Fair Isle, 11th September, found dead 16th; South Ronaldsay (Orkney), 24th September. Booted Warbler *Iduna caligata* North Ronaldsay, 16th August; Sumburgh (Shetland), 18th–20th August; Burnham Overy Staithe (Norfolk), 23rd–26th September; Unst, 27th September; Bressay (Shetland), 29th September. Sykes's Warbler *Iduna rama* Foula, 23rd–29th September; Tresco, 5th–6th October. Melodious Warbler *Hippolais polyglotta* Records from Caernarfonshire,

Paul French

405. Sykes's Warbler *Iduna rama*, Foula, Shetland, September 2012.

Ian Cowgill

406. Paddyfield Warbler *Acrocephalus agricola*, Fair Isle, September 2012.

Cumbria, Devon (three), Dorset, Kent, Pembrokeshire (perhaps three), Scilly (three) and Sussex. Aquatic Warbler *Acrocephalus paludicola* Records from Cheshire & Wirral, Cornwall (two), Dorset (four), Scilly and Somerset. Paddyfield Warbler *Acrocephalus agricola* Ythan Estuary (North-east Scotland), 8th September; Fair Isle, 24th September to 1st October. Blyth's Reed Warbler *Acrocephalus dumetorum* Sanday (Orkney), 21st September; Unst, 21st September to 1st October; Fair Isle, 22nd–28th September, with two on 29th, one to 2nd October; Whalsay, 24th September; Foula, 24th September, two 25th September, one to 2nd October; Fleetwood (Lancashire & N Merseyside), 28th–29th September; South Uist, 28th September to 2nd October; Barns Ness (Lothian), 28th September; Collafirth (Shetland), 29th–30th September; Inishbofin (Co. Galway), 5th–7th October. Great Reed Warbler *Acrocephalus arundinaceus* Unst, 22nd September; Rerwick (Shetland), 5th October.

Rose-coloured Starling *Pastor roseus* After the first in Shetland on 11th August, another 13 widely scattered arrivals, including three in Cornwall and two in Norfolk, Scilly and Shetland. Swainson's Thrush *Catharus ustulatus* Foula, 23rd September; Barra (Outer Hebrides), 2nd–4th October. Grey-cheeked Thrush *Catharus minimus* St Agnes, 6th–7th October. White's Thrush *Zoothera dauma* Inner Farne (Northumberland), 24th September; South Ronaldsay, 27th September. Black-throated Thrush *Turdus atrogularis* Fair Isle, 6th October. Thrush Nightingale *Luscinia luscinia* Fair Isle, 24th–26th August. Red-flanked Bluetail *Tarsiger cyanurus* Whalsay, 27th September. Siberian Stonechat *Saxicola maurus* Dumpton Gap (Kent), 27th September; Hoswick (Shetland), 27th September to 7th October; Out Skerries, 1st October; Firkeel (Co. Cork), 1st October.

Spanish Sparrow *Passer hispaniolensis* Landguard (Suffolk), 24th August and sporadically 1st–14th and 27th September.

Citrine Wagtail *Motacilla citreola* North Ronaldsay, 12th–14th August and 23rd–24th September; Fair Isle, two, 14th–15th August, one to 16th, another 25th August, another 21st September, probably another 5th October; Unst, 17th August; Foula, 31st August to 3rd September; St Mary's, 1st–6th September, two 7th–18th September; Barns Ness, 20th–21st September; Muckle Roe (Shetland), 23rd September; Tresco, 24th–26th September;

Mike Pennington

407. Pechora Pipit *Anthus gustavi*, Unst, September 2012.

Roger Riddington

408. Buff-bellied Pipit *Anthus rubescens*, Rerwick, Mainland, Shetland, September 2012.

Tiree, 27th–29th September; Titchwell, 28th September. Blyth's Pipit *Anthus godlewskii* Foula, 24th September. Tawny Pipit *Anthus campestris* Barking Bay (Greater London), 19th August; Bradwell-on-Sea (Essex), 21st August; Pegwell Bay (Kent), 9th September; Cuckmere Haven (Sussex), 23rd September; Gramborough Hill (Norfolk), 29th September; Dawlish Warren (Devon), 29th September; St Catherine's Point (Isle of Wight), 5th–6th October. Olive-backed Pipit *Anthus hodgsoni* Fair Isle, 24th–26th September, two 27th–28th, one to 29th September; Foula, two between 24th and 29th September; South Ronaldsay, 26th September; Yell (Shetland), 26th September; Quendale (Shetland), 27th September; Toab, 27th–29th September; Whitburn, 28th September; Lower Voe, 28th September. Pechora Pipit *Anthus gustavi* Out Skerries, 21st September; Unst, 30th September to 2nd October; Fair Isle, 1st–2nd October. Red-throated Pipit *Anthus cervinus* Davidstow (Cornwall), 28th September; Calf of Man, 1st October; St Martin's, 7th October. Buff-bellied Pipit *Anthus rubescens* South Uist, 19th–25th, two 26th, at least one to 2nd October; Cape Clear, 24th September; St Mary's, 26th–29th September and 7th October; Tiree, 27th September; Ballinrannig/Smerwick, 28th September to 8th October; Fair Isle, 29th September; Rerwick/Scousburgh (Shetland), 30th September to 4th October; Carrickfergus (Co. Antrim), 1st–2nd October.

Arctic Redpoll *Carduelis hornemanni* Unst, 28th September to 4th October; Out Skerries, 5th October. Rustic Bunting *Emberiza rustica* Fair Isle, 30th August; North Ronaldsay, 5th October. Little Bunting *Emberiza pusilla* After the first in Orkney on 23rd September, about another 17 arrived, most during 23rd–29th September, with six on 26th alone. Most were in the Northern Isles and on east-facing coasts, but singles reached Caernarfonshire and Dorset. Black-headed Bunting *Emberiza melanocephala* North Ronaldsay, long-stayer to 13th August.

Magnolia Warbler *Setophaga magnolia* Fair Isle, 23rd September. Blackpoll Warbler *Setophaga striata* Inishmore, 7th October. Yellow-rumped Warbler *Setophaga coronata* Dursey Island (Co. Cork), 3rd–6th October; Inishmore, two, 6th October.

Ian Cowgill

409. Magnolia Warbler *Setophaga magnolia*, Fair Isle, September 2012.

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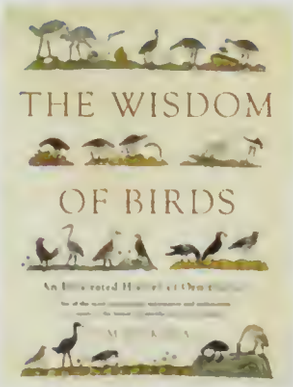

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